DOCUMENT RESUME

ED 145 248 08 CE 013 406

TITLE	Implementing Career Education. Instructional Strategies Guide for Kindergarten through Grade Twelve.
INSTITUTION	California State Dept. of Education, Sacramento.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
PUB DATE	77
NOTE	179p.
AVAILABLE FROM	Publications Sales, California State Department of Education, P.O. Box 271, Sacramento, California 95802 ($0.65, plus 6% sales tax for California residents)
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	*Behavioral Objectives; *Career Awareness; *Career Education; Educational Objectives; Elementary Secondary Education; Fused Curriculum; *Learning Activities; *Lesson Plans; Resource Materials; Student Evaluation; Teaching Guides; *Units of Study

ABSTRACT

A sampling of units or lessons that can be used in integrating career education concepts into instructional activities for the kindergarten through twelfth grade levels are included in this guide. Also included are techniques for establishing cooperative efforts between counselors and teachers. Content is divided into four levels: level I--kindergarten through grade 3; level II--grades 4 through 6; level III--grades 7 and 8; and level IV--grades 9 through 12. Each level is divided into some or all of the following traditional subject areas or disciplines: mathematics, science, English, social studies, foreign language, music, art, business education, industrial education, home economics, agriculture, physical education, driver education, guidance, and work experience education. Each unit is arranged in a format that includes the level; subject area; objective; career education goal (one of the ten goals of career education discussed in the introductory material is selected for each objective); strategy (special instructions to the teacher regarding the environment in which the activity is taught and any necessary arrangements); student activity; resources/media (suggested procedures for enhancing the activity); and evaluation (suggested methods of evaluating student performance). An annotated list of resource materials is appended. (SH)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED145248

Implementing Career Education

Instructional Strategies Guide

for Kindergarten Through Grade Twelve

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL BY MICROFICHE ONLY HAS BEEN GRANTED BY

M. Butts

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND THE ERIC SYSTEM CONTRACTORS."

CE 013 406

Prepared under the direction of the
Vocational and Career Education Services Section
Career Education Unit

California State Department of Education
Wilson Riles, Superintendent of Public Instruction
Sacramento 1977

This publication was edited and prepared for photo-offset production by the Bureau of Publications, California State Department of Education, and published by the Department, 721 Capitol Mall, Sacramento, California 95814.

Printed by the Office of State Printing
and distributed under the provisions
of the Library Distribution Act

1977

Copies of this publication are available for 65 cents each, plus 6 percent sales tax for California residents, from Publications Sales, California State Department of Education, P.O. Box 271, Sacramento, CA 95802. A list of other publications that are available from the Department may be obtained by writing to the same address.

Additional information about Department publications may be found on page iv of this publication.

Preface

The need for materials on career education in California's public schools has been demonstrated by the overwhelming number of requests for assistance from educators throughout the state. Teachers, counselors, and administrators are asking how they can integrate the concepts of career education into their instructional and guidance activities.

This preliminary edition of a strategies guide for kindergarten through grade twelve provides goals, objectives, strategies, activities, resources, and evaluations for all of the subject areas traditionally offered. The guide also includes techniques for establishing cooperative efforts between counselors and teachers.

The purpose of this publication is to provide ideas that can be used at all levels and in all disciplines. It therefore contains a sampling of units or lessons that can be used in the classroom. The activities listed have been developed by educators at research sites, by participants in workshops, and by staff members of the Career Education Unit. Contributing staff members were Maria Arevalo, Constance Gipson, Mary Lou Hill, and Jim Toogood.

WILLIAM E. WEBSTER
Deputy Superintendent
for Programs

RICHARD S. NELSON
Administrator, Vocational and Career Education
Services Section

REX FORTUNE
Associate Superintendent
for Secondary Education Programs

PAUL N. PETERS
Manager, Career Education Unit

Other Career Education Publications of the California State Department of Education

Career Education: A Position Paper on Career Development and Preparation in California (1974) $.65
Career Education Microfiche Collection Catalog (1975) $.65
Implementing Career Education: An Administrator's Handbook (1976) $.65
Implementing Career Education: Community Involvement (1977) $.65
Implementing Career Education: Concept and Process (1977) $.65
Implementing Career Education: Exemplary Practices for Career Education in California Public Schools (in preparation) $.65
Implementing Career Education: Nine Model Practices (1976) $.65
Sources of Information on Career Education: An Annotated Bibliography (1975) $.65

For a list of Department publications with prices and ordering information, write to California State Department of Education, P.O. Box 271, Sacramento, CA 95802, requesting *Selected Publications of the California State Department of Education* (revised and published semiannually by the Bureau of Publications).

Contents

	Page
Preface	iii
INTRODUCTION	1
LEVEL I, KINDERGARTEN THROUGH GRADE THREE	5
LEVEL II, GRADES FOUR THROUGH SIX	47
LEVEL III, GRADES SEVEN AND EIGHT	92
LEVEL IV, GRADES NINE THROUGH TWELVE	121
RESOURCE MATERIALS	171

Introduction

The need for systematic career education long has been apparent to many in California. California's schools primarily have been concerned with preparing students to enter the next level of education and have done little toward preparing students to make the transition from school to the real world. Students generally have deferred career decisions and vocational education until they have almost completed or have already completed their school years. Unfortunately, many students fail to develop plans until the end of their schooling, while others do not even reach their educational goals.

The following definition was developed by members of the Career Education Unit:

Career education is a comprehensive educational process that begins in early childhood and continues throughout the life span of an individual. All educators are involved in providing this broad approach to the economic, social, and psychological development of each student. Career education is not a supplement to the curriculum; rather, it is infused into all disciplines and educational experiences. While emphasis is placed on individual development, instruction and guidance are integrated and articulated from grade level to grade level and from institution to institution. They offer each student multiple opportunities to assess personal attributes and aspirations; explore educational and occupational opportunities; develop personal, social and educational goals; make realistic choices about life-styles and values; and develop the ability to cope with present and future roles, settings, and events of life.

Goals for Career Education

The Career Education Unit also developed ten goals for students in California. These goals for career education are as follows:

1. Self-Awareness

Students will develop a positive attitude toward self and others, a sense of self-worth and dignity, and motivation to accomplish personal goals.

2. Career Awareness

Students will develop a continuing awareness of occupational opportunities and relate these opportunities to personal aptitudes, interests, and abilities.

3. Attitude Development

Students will develop a positive attitude toward work and appreciate the contribution of work to self-fulfillment and to the welfare and productivity of the family, community, nation, and world.

4. Educational Awareness

Students will recognize that educational experiences are a part of personal career development.

5. Economic Awareness

Students will understand our economic system and be aware of the relationship of productive work to the economy and to the individual's well-being.

6. Consumer Competency

Students will achieve sufficient economic understanding and consumer competency to make wise decisions in the use of their resources.

7. Career Planning and Decision Making

Students will engage in the career development process and accept responsibility for the series of choices that carries an individual along the career development continuum.

8. Career Orientation

Students will explore career possibilities to increase awareness and understanding of the occupational options available to them.

9. Career Exploration

Students will plan and participate in a career-exploring program that contributes to the individual's search for occupational and personal satisfaction.

10. Career Preparation

Students will acquire marketable skills leading to employment in one or more occupations in a selected cluster. This will be accomplished by means of in-depth exposure that is designed to enhance each student's employability and help him or her recognize that advanced training and/or continuing education may be necessary.

The Cluster Framework

The *Dictionary of Occupational Titles*, prepared by the U.S. Department of Labor, contains 45,000 entries. Dealing with each of these jobs individually would be impossible; however, these jobs can be grouped into a series of manageable clusters.

The U.S. Office of Education has developed a cluster scheme that includes 95 percent of the jobs in today's world. The clusters are as follows:

1. Business and office
2. Marketing and distribution
3. Communications media
4. Construction
5. Manufacturing
6. Transportation
7. Agribusiness and natural resources
8. Marine science
9. Environmental control
10. Public service
11. Health
12. Hospitality and recreation
13. Personal service
14. Fine arts and humanities
15. Consumer and homemaking

School districts are free to select the particular number of clusters that best meets their local needs. Each cluster includes jobs at all levels, from entry-level through skilled jobs, technical jobs, and professional jobs. That is, each cluster contains logical career ladders that require increasing levels of education.

The Infusion Strategy

Career education is not a supplement to the curriculum. It is an important element in the ongoing instructional activity. Career education concepts are infused or incorporated into the day-to-day instructional and guidance activities of the school. The English teacher who includes a study of Mark Twain's occupations as a part of a unit does not delete a part of the existing curriculum but rather enhances the curriculum by giving it a different focus. The English teacher who relates English to journalism, communication, and stenography provides motivation by helping students see the need for acquiring skills in order to reach their goals.

The infusion of career education concepts into each subject-matter discipline is only one aspect of career education. Career education seeks to blend the development of academic, vocational, and leisure skills. Consequently, many career education activities are interdisciplinary in nature, facilitating an understanding of the interrelationships that exist in society.

A variety of techniques are included; i.e., peer group assistance, cross-age interaction, and team and individualized learning. Therefore, subject-to-subject and level-to-level articulation and coordination, horizontally and vertically, are essential.

Individualized Education

A major objective of career education is to make the subject matter more relevant and more meaningful to students. Many students lack the motivation for pursuing purely academic subject matter. In addition, some students learn essential abstract concepts best when these concepts are used in concrete situations. Whether in fine arts or in industrial education, a major instructional objective should be to relate subject matter to the real world.

"Hands-on" activities give students the opportunity to make practical applications of the subject matter concepts and to simulate the work activities of the occupational area being studied. Role-playing activities develop self-awareness and emphasize the feelings that accompany occupational and leisure situations. By role playing, students can determine those activities that enhance their self-image and self-satisfaction.

Resources

Career education is a cooperative educational process that involves students, parents, teachers, employers, and members of the community. Teachers who have worked in other occupations are an important resource. Parents represent a wide range of occupations and can be used as instructional agents. Community members with special skills and hobbies also are effective teachers. Visits by members of the community, student work experiences in the community, and field trips occupy a large portion of time in the career education process.

Many school districts have established career centers at individual schools. These centers usually

are equipped with a variety of media relating to career education. The involvement of the physical senses of the student can be accomplished through the use of films, filmstrips, tapes, and cassettes. Individualized instruction requires the utilization of a variety of techniques, and the multimedia approach does lend itself to the needs of individual students.

Career Guidance and Placement

Because individuals differ in their abilities, interests, attitudes, and values, career education includes information about the world outside the school, the range of options and alternatives open to the individual, and the types of training that can help develop decision-making skills. Students can plan to acquire the skills necessary to achieve their chosen life-styles.

A comprehensive career education momentum requires coordination of the career guidance program with the other components of career education. Teachers, counselors, career center personnel, work experience coordinators, and regional occupational program (ROP) personnel are involved in career education in a cooperative effort. These programs must involve all students, regardless of their postsecondary plans.

Most schools provide little assistance to students who seek to enter the labor market. Under the career education concept, schools will develop a capability to assist those students who wish to enter the world of work. Graduates will be surveyed to determine the number of individuals who elect to enter the job market and those who continue their education to reach career goals.

This publication describes activities that illustrate the infusion of career education concepts into the curriculum. These activities, developed by educators at demonstration sites and workshops throughout the state, are intended to serve as catalysts in the implementation of the career education process in California's schools.

Career Education Concepts

Most of the following concepts of career education may be integrated easily into the activities described in this publication.

Individuals may find many jobs that are suitable for them.
People do many kinds of work.
A wide variety of jobs may be classified in several ways.
Each individual has a contribution to make to the world of work.
Work means different things to different people.
Individuals differ in their interests, aptitudes, abilities, values, attitudes, and physical make-up.
People work for various rewards and satisfactions.
Occupations and life-styles are interrelated.
Hobbies and interests may lead to a vocation.
A relationship exists between the commitment to education and work and the availability and use of leisure time.
Satisfying and rewarding work may bring self-fulfillment.
An understanding and acceptance of self is important throughout life.
Work has dignity.
Persons need to be recognized as having dignity and worth.
Society is dependent upon the work of many people.
Work is important to the worker and to society.
Work requires the cooperation of different people.
Personally satisfying relations between workers are important to each individual's job satisfaction.
Occupational supply and demand have an impact on career planning.
Geographical settings may affect work.
Different kinds of jobs will exist in the future.
Individuals must be adaptable in a changing society.
Technological progress eliminates changes and creates work.
Job specialization creates interdependency.
Some people produce goods; others produce services.
Individuals need sufficient economic understandings and consumer competencies to make wise decisions in the use of resources.
Education and work are interrelated.
The school is part of the preparation for life roles.
Individuals are responsible for their career planning.
Finding out about one's self interests and abilities is important in decision making.
Environment and individual potential interact to influence career development.
Work experience facilitates career decision making.
Different jobs require individuals who have different types of interests, different capabilities, and different attitudes.

The Format of the Strategies Guide

LEVEL:	(Each age span has different developmental goals. This publication, therefore, has been divided into the following four levels: Level I–kindergarten through grade three; Level II–grades four through six; Level III–grades seven and eight; and Level IV–grades nine through twelve. Each level then is divided into the traditional subject areas or disciplines. The different developmental levels are intended for the convenience of planning an articulated curriculum; however, curriculum designers or instructors should move freely between levels in accordance with student needs.)
SUBJECT AREA:	(The discipline or disciplines involved in the activity are listed here. Many of the activities are interdisciplinary. In those activities that involve more than one discipline, a team effort enhances and reinforces learning.)
CAREER EDUCATION GOAL:	(One of the ten goals of career education is selected for each objective.)
OBJECTIVE:	(The objective indicates what the student will be able to do.)
STRATEGY:	(Presented here are special instructions to the teacher regarding the environment in which the activity is taught and any necessary arrangements.)
ACTIVITY:	(The experiences through which the learner will achieve the objective are described here. Instructors should adapt each activity to meet local needs.)
RESOURCES/MEDIA:	(Suggested procedures for enhancing the activity are listed.)
EVALUATION:	(Suggested methods of evaluating student performance are described.)

Level I, Kindergarten Through Grade Three

This section of the guide includes strategies for kindergarten through grade three in the following subject areas:

Language Arts	Health
Mathematics	Music
Science	Art
Social Studies	Physical Education

Some units also are designed to include a guidance component. These units might be planned and implemented cooperatively between teacher and guidance specialist.

SUBJECT AREA: Language Arts

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *Each pupil will develop an awareness that the ability to communicate effectively helps a person work well with others.*

STRATEGY: The teacher asks the pupils to imagine what the world was like before people developed a language—both spoken and written. The class then discusses the importance of communicating effectively in working with others.

ACTIVITY: The pupils dramatize the following situations:

1. A man needs a job. He looks in the classified section of a newspaper. He cannot read. What problems will he have?
2. A telephone operator does not know how to listen. What problems will occur?
3. A waiter takes orders for food. The waiter cannot write. What problems will occur?

RESOURCES/MEDIA: None

EVALUATION: The pupils should understand how reading, writing, using arithmetic, and listening are related to one's ability to communicate and work effectively with people.

SUBJECT AREA: Language Arts/Art

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will become aware of the occupations of relatives, friends, and neighbors.*

STRATEGY: The teacher plans to discuss individual differences, likes, and dislikes with regard to occupational areas. The pupils will be encouraged to observe different occupations: police officers, fire station attendants, post office personnel, truck drivers, production workers, telephone and construction personnel, school personnel, health personnel, cafeteria personnel, and others.

ACTIVITY: The topic can be introduced by means of group discussions. Where a bus is available, pupils can go on field trips. The pupils can record their experiences. They can discuss the likes and dislikes of family members, neighbors, and friends with regard to their occupations.

RESOURCES/MEDIA: School plant personnel (bus drivers, cafeteria workers, custodians, teachers, and principal)
Films
Books
Work uniforms

EVALUATION: The pupils participate in class discussions. After the field trip the teacher evaluates comments made by pupils. The pupils visit the display of occupations they have observed on the trip. The teacher can write a story based on oral reports from the pupils.

SUBJECT AREA: Language Arts/Health/Art

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will be able to identify personal attributes that make them unique.*

STRATEGY: The teacher plans to have a discussion with the class on how people are alike and how they are different.

ACTIVITY: To get acquainted with physical self, the pupils can do the following:

1. Choose a partner and trace one another's body.
2. Use songs and games to identify parts of the body.
3. Read stories, show pictures, and perform activities dealing with the senses.
4. Describe personal appearance, using a mirror.

The pupils can keep a personal growth chart, recording date of birth, fingerprints, footprints, height, and weight. They can draw pictures using live models in various poses. The class can view filmstrips dealing with personal attributes.

RESOURCES/MEDIA: *Focus on Self-Development Kit*, units A, B, C, and D. Published by Science Research Associates, Inc., 259 Erie Street, Chicago, IL 60611. Western Office: 165 University Avenue, Room 201, Palo Alto, CA 94301.
Songs
Books
Filmstrips
Mirror
Tape recorder
Magazine pictures

EVALUATION: Each pupil gives five words to describe himself or herself. Two children, working as a team, give five words to describe each other.

SUBJECT AREA: Language Arts/Social Studies

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will describe occupations of family members and classify those occupations according to goods or services produced.*

STRATEGY: The instructor plans to make a chart of the occupations, dividing them into jobs that produce goods or that provide services. Activities are designed to develop the concepts of goods and services.

ACTIVITY: The teacher and pupils can collect hats or pieces of equipment that suggest different occupations (chef's hat, nurse's cap, hammer, toy tractor, and the like). Each child selects an object, names the occupation, and classifies it under *goods* or *services*. The pupils discuss family members' occupations and whether these produce goods or services. The pupils view films and examine books related to service or production workers.

RESOURCES/MEDIA: *I WANT TO BE* series. Published by Children's Press, Inc., 1224 W. Van Buren Street, Chicago, IL 60607.

OUR WORKING WORLD series. Published by Science Research Associates, Inc., 259 Erie Street, Chicago, IL 60611. Western Office: 165 University Avenue, Room 201, Palo Alto, CA 94301.

EVALUATION: Using pictures of occupations from chart in previous lessons, the pupils reclassify at least ten of the occupations in accordance with the goods or services produced.

SUBJECT AREA: Language Arts/Guidance

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will be able to identify different feelings that people have about work.*

STRATEGY: Through the use of creative dramatics, the teacher plans to develop the concept that work means different things to different people.

ACTIVITY: The class participates in an association game as follows:

1. Teacher selects a job, and children hold up happy or sad faces to express their feelings for that job.
2. Each pupil can give a one-word response or a sentence to express feelings.

The pupils create skits to depict feelings associated with work. Some examples to be considered are the following:

1. All people don't like the same jobs.
2. Repetition may cause boredom.
3. Some jobs may be lonely.
4. Some jobs may be dangerous.
5. Additional experience or training is sometimes necessary.
6. Feelings about jobs may change.

RESOURCES/MEDIA: *DUSO Kit.* Published by American Guidance Service, Inc., Publishers' Building, Circle Pines, MN 55014.

EVALUATION: The teacher constructs a large circle and labels segments of the circle with feelings related to work. The pupils select several occupations and list each under as many categories as possible to show that more than one feeling may be related to a job.

SUBJECT AREA: Language Arts/Guidance

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *Given an opportunity to discuss various emotions, the pupils will be able to analyze the behavior resulting from those emotions.*

STRATEGY: The instructor plans class activities and discussions that will develop an awareness that there is a continuous interaction between a person's knowledge and acceptance of his or her emerging life-style.

ACTIVITY: The pupils may do the following:

1. Use books or pictures to develop vocabulary words that describe emotions.
2. Use creative dramatics to show various emotions.
3. View filmstrips or listen to records that deal with feelings.
4. Discuss pictures that depict emotional problems of young children.

RESOURCES/MEDIA: *DUSO Kit.* Published by American Guidance Service, Inc., Publishers' Building, Circle Pines, MN 55014.

Focus on Self-Development Kit, units C, D, K, L, M, N, O, and P. Published by Science Research Associates, Inc., 259 Erie Street, Chicago, IL 60611. Western Office: 165 University Avenue, Room 201, Palo Alto, CA 94301.

Books
Records
Filmstrips

EVALUATION: The pupils complete ten open-end statements such as:

1. Most of the time I feel . . . .
2. I am happy when . . . .
3. I am sad when . . . .
4. I am afraid when . . . .
5. Sometimes I can tell how you feel by . . . .

2—89445

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Shown photos or pictures of ten occupational roles, each pupil will be able to identify at least three.*

STRATEGY: The teacher prepares ten large tagboard posters with pictures showing various types of occupations. Cards numbered 1 to 10 also will be prepared. This will be a teacher-directed activity.

ACTIVITY: The pupils play a game called "Hot Spot." The numbers are scattered on the floor. When the teacher calls an occupation, the pupils look at the charts and run to the number on the floor that matches the occupation. The children develop number recognition and career awareness simultaneously.

RESOURCES/MEDIA: Large tagboard
Old magazines

EVALUATION: Given a dittoed sheet, each pupil should be able to identify at least three of the ten occupations shown and to write the correct number by that occupation. The evaluation by the teacher will include verbal questioning of the pupils.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will be able to name three occupations in which mathematics is required.*

STRATEGY: The teacher plans to read to the class about occupations.

ACTIVITY: The pupils cut out magazine pictures of people in different occupations and paste the pictures on a mural. They count the occupations they have found. The occupations on the mural are identified by numbers. The pupils take cards with numerals and match them to the numbers on the mural.

RESOURCES/MEDIA: Books on careers
Old magazines
Butcher paper

EVALUATION: Each pupil is given three number cards. From the 15 to 20 occupations pictured on the mural, he or she should be able to name three.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Given the basic knowledge of weights and measures, the pupils will be able to describe situations and to define objects in basic terminology.*

STRATEGY: The teacher plans to assist the pupils with the basic concepts of measurement. The pupils will be given opportunities to discuss measurement and describe objects using terms such as greater than, less than, taller, shorter, heavier, lighter, larger, smaller, and so on. Persons who use measurement in their work can be invited to address the class.

ACTIVITY: The pupils compare others in terms of taller or shorter. Trees, shrubs, buildings, and other objects can be described using such basic terms. Carpenters, butchers, and nurses can be invited to the classroom to reinforce the simple concepts of measurement and to describe how some jobs entail measurement.

RESOURCES/MEDIA: Data concerning physical properties of different objects such as books (weight), chairs (size), buildings, and trees

EVALUATION: The teacher observes the pupils as they practice using the basic terms of measurement.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Consumer Competency

OBJECTIVE: *The pupils will develop an understanding of the value of money and will learn how people purchase goods based on wise selection.*

STRATEGY: The teacher gathers odds and ends (books, pencils, old toys, and the like) and plans an auction. This will be preceded by lessons in adding and subtracting. The pupils will bid for items with play money. They will be graded on how many items they can buy for the lowest price.

ACTIVITY: The pupils participate in class activities such as adding and subtracting of whole numbers and decimals. They talk about basic consumer ideas and practice rapid computation (similar to shopping in a grocery store with limited funds and a list to complete).

RESOURCES/MEDIA: A variety of small items for the auction

EVALUATION: The teacher grades the pupils based on the number of items purchased and the amount of money expended. (Each pupil can start with one dollar in play money, and items can be priced in cents.)

SUBJECT AREA: Mathematics/Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will be able to identify how their interests, abilities, and attitudes differ from those of their friends.*

STRATEGY: The instructor plans to ask the pupils to bring in baby pictures of themselves. They will describe how they resemble or differ from others—then and now. The teacher plans a mathematics lesson using the number line and prepares materials for the activity described.

ACTIVITY: Using the number line, the pupils make a long line on a large sheet of paper or on rolled paper. (A roll of paper such as that used on adding machines is best.) At five intervals they draw pictures of things that interest them. This activity can have many variations using concepts of mathematics.

RESOURCES/MEDIA: Number line
Several rolls of adding machine tape
Crayons

EVALUATION: Each pupil compares the number line of interests with that of a friend to see how many ways they differ.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will be aware of how science helps people grow living things.*

STRATEGY: The teacher plans a visit to a local nursery and instructs the pupils to discover how plants are handled. The pupils learn the responsibilities workers have and how science helps workers. They will also discover that workers' attitudes vary.

ACTIVITY: The pupils observe and interview workers at a local nursery. Using the information learned, the pupils plant seeds (individual or class projects) and take care of their garden.

RESOURCES/MEDIA: Science text (*CONCEPTS IN SCIENCE* series)
Milk cartons
Seeds
Soil

EVALUATION: Pupils make a list of careers they think use science. At the end of the discussion, the teacher and pupils compile a revised list and compare it to the first list.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will be able to tell what special training a scientist must have.*

STRATEGY:	The instructor invites a secondary school student who is interested in becoming a scientist to conduct an experiment in the classroom.
ACTIVITY:	The pupils observe the experiment. If it is not dangerous, they can get involved. They interview the secondary student regarding his or her career goal. (In the interview the secondary student should bring out the special training a scientist must have and how a good general education is a necessary foundation for future specialized training.)
RESOURCES/MEDIA:	Science text
EVALUATION:	Pupils list three areas of specialized training a scientist must have.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will develop an awareness of the concept that initial conclusions may have to be altered on the basis of additional observations and information.*

STRATEGY: The instructor plans a unit on plant growth. Topics should include seed germination and the conditions necessary for plant development. The notion of making decisions concerning plant life cycle, preconceived ideas, and logical processes should be discussed.

ACTIVITY: The pupils are instructed in the basic concepts of plant classification, the characteristics of developing plant life, and the necessary conditions and changes in evolvement from stage to stage. Seeds can be planted in milk cartons or other containers.

RESOURCES/MEDIA: Seeds, water, soil, plant nutrients, and containers

EVALUATION: The instructor questions the pupils about plant growth and development. The pupils should know what conditions are necessary for growing plants.

SUBJECT AREA: *Social Studies*

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *The pupils will develop an understanding of how people work to acquire income to buy goods and services.*

STRATEGY: The teacher plans this class activity to include stories, games, and artwork. One game is the grab bag, with a variety of old toys, books, and other articles. The ideas of bartering and trading are presented.

ACTIVITY: The children listen to stories about different work roles and the variety of jobs in the community. Instruction includes the concept of salary and wages and how people use their money for food, clothing, shelter, and other goods and services. Each pupil participates in the grab bag game, taking his or her turn at selecting an item. If it is not an item wanted, the child may make a trade with another pupil.

RESOURCES/MEDIA: Books
Pictures
Film on the use of money

EVALUATION: The teacher observes and evaluates how the pupils act out roles in bartering situations.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will develop an understanding of the responsibilities of people in the transportation field.*

STRATEGY:	The teacher leads a class discussion on local bus transportation. The bus company is contacted regarding a proposed bus ride. Interviews with the bus driver are planned.
ACTIVITY:	A bus driver visits the classroom to discuss the various aspects of local transportation and the role and function of drivers. The pupils are taken on a bus trip. Back in the classroom the pupils can play the roles of driver, passengers, and others involved. (A cardboard mockup of a bus can be made.)
RESOURCES/MEDIA:	Maps of community bus routes Films and slides of bus transportation
EVALUATION:	The teacher asks questions about the bus driver's responsibilities and the problems of a local transportation system.

SUBJECT AREA: Social Studies/Language Arts

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *After exploring the changing world of work, each pupil will be able to list reasons for which a person may work.*

STRATEGY: The teacher plans activities that develop an awareness of the different meanings work may have for individuals. The pupils and their teacher plan a class "hobby show."

ACTIVITY: The children can discuss activities which they do for fun and which adults do to earn a living; for example, playing ball, cleaning, cooking, typing, and taking pictures. The teacher may invite someone to show and discuss a hobby. At the hobby show a child can demonstrate what work is done to prepare material in relation to his or her hobby. The class can view filmstrips that show how hobbies may lead to a career.

RESOURCES/MEDIA: Books
Films and filmstrips

EVALUATION: The teacher shows pictures of people at work, and the pupils tell why they think the work is being done. Each child should identify at least three occupations and give three to five examples of avocations that can become vocations.

SUBJECT AREA: Social Studies/Language Arts

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *Each pupil will be able to identify and define at least five characteristics of the term* ***dignity****.*

STRATEGY:	The teacher writes on the board the words that pupils feel best identify *dignity*. The teacher leads class discussion and formulates a final list.
ACTIVITY:	The class reads a story showing a struggle for worth, such as *Little Toot** or *The Little Engine That Could***. Someone can be invited to describe job responsibilities. The pupils read stories and view filmstrips dealing with manners and courtesy. A nurse can be invited to discuss good grooming and cleanliness. The class can discuss personal appearance as it relates to job image.
RESOURCES/MEDIA:	Books Records Films and filmstrips
EVALUATION:	The pupils list and define five characteristics of the term *dignity* (pride, satisfaction, honesty, responsibility, and personal appearance).

*Hardie Gramatky, *Little Toot.* New York: G. P. Putnam's Sons, 1939.

**Watty Piper, *The Little Engine That Could.* Eau Claire, Wis.: E. M. Hale & Co., 1954.

SUBJECT AREA: Social Studies/Science

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVES: *The pupils will be able to tell how they differ physically from others.*

STRATEGY: The teacher prepares and directs activities that will help pupils become aware of how one differentiates oneself from others.

ACTIVITY: The children are paired, like and unlike, in appearance (sex, height, and color). The pupils observe themselves in a mirror and discover how they differ. They examine and compare inanimate objects such as pencils, nuts, leaves, blocks, and stones. The pupils study fish in an aquarium, comparing likenesses and differences. They compare twins.

RESOURCES/MEDIA: Science kit
Mirror
Aquarium
Magazine pictures

EVALUATION: Pupils should be able to note physical similarities and differences in the people illustrated in magazines.

SUBJECT AREA: Social Studies/Art

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to name five basic occupations. They will become aware of people who produce goods and those who provide services.*

STRATEGY: The pupils select pictures depicting people at work and then act out the different occupations.

ACTIVITY: Each pupil describes a typical day in his or her life and the various occupations observed during that day.

RESOURCES/MEDIA: Books
Pictures and printed materials
Films
Field trips

EVALUATION: The pupils assemble a picture book that shows people at work. They identify people who produce goods and those who provide services.

SUBJECT AREA: Social Studies/Guidance

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *Each pupil will be able to analyze and identify situations where worker cooperation is needed.*

STRATEGY: The teacher prepares and initiates a role-playing situation that will help the pupils become aware that worker cooperation is essential; for example, supermarket workers and football players.

ACTIVITY: The pupils construct a supermarket in the classroom and act out the appropriate jobs. They follow this with a discussion about the need for cooperation. The teacher and pupils watch a football game and discuss team cooperation involved in all sports.

RESOURCES/MEDIA: Guidance counselor

EVALUATION: Each pupil should be able to write an essay about what would happen if people failed to cooperate during an emergency such as a power shortage, accident, or fire.

SUBJECT AREA: Health

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be aware of and be able to name health-related careers.*

STRATEGY: The instructor invites guest speakers from a health-related field to demonstrate and discuss their occupations.

ACTIVITY: After listening to the speakers, the pupils list the ways our health and safety are affected by people in the health-related fields. The class discusses why good health is essential in a career. The pupils make a calendar and keep a personal record of their health habits.

RESOURCES/MEDIA: School nurse
Speakers
Health text
Films and filmstrips

EVALUATION: In a given time interval, the pupils should be able to name at least five health-related careers.

3—89445

SUBJECT AREA: Health

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Provided a list of health and safety rules, each pupil will be able to describe situations in the home, in the school, and in the community where these rules are applied.*

STRATEGY: The teacher plans a unit on basic health and safety concepts. The subjects covered might include washing oneself, brushing one's teeth, having a good breakfast, crossing streets, running in school passageways, using the lavatory facilities, and lining up for school activities. The teacher might discuss roles of various people in these activities.

ACTIVITY: The teacher and class discuss health and safety practices. The pupils can play the roles of hall monitors, traffic guards, and the like. Discussions on what constitutes good nutrition can include the occupations that produce and process food: the farmer, the grocer, the restaurant worker, and others. The pupils can keep records of foods they eat at each meal for one week.

RESOURCES/MEDIA: Films on nutrition
Charts and posters on health, safety, and nutrition
Dental health kits

EVALUATION: The teacher can evaluate each pupil's participation in class discussions and role-playing situations as well as their efforts in making health posters and using dental health kits.

SUBJECT AREA: Health/Science

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will participate in a vision testing program and will develop an awareness of occupations involved.*

STRATEGY: The teacher prepares members of the class for vision examinations by discussing the wearing of glasses, how eyes are tested, who performs the tests, and who makes and fits glasses. The terms *optician, optometrist, oculist,* and *ophthalmologist* are explained.

ACTIVITY: The pupils participate in class discussion of problems of sight. Those who wear glasses can tell of their experiences. The teacher discusses the differences between nearsightedness and farsightedness. The pupils view charts of human eye structure.

RESOURCES/MEDIA: Charts of eye
Eye test charts
Glasses worn by teachers and pupils

EVALUATION: The pupils should be able to discuss eye problems and the need for glasses, and they should know where they can have their eyes tested.

SUBJECT AREA: Health/Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will be able to explain ways in which an individual can obtain personal satisfaction from an occupation.*

STRATEGY: The teacher arranges for the class to visit a health site, observe the many occupations involved, and talk with some of the workers.

ACTIVITY: In the classroom the pupils can apply what they have learned in numerous ways. For example, after the pupils make up a list of the occupations they have observed, they might compose riddles for each occupation.

Using large filing cards the pupils write their riddles on one side and the answers on the other. The cards can be placed in a "riddle box" for leisure activity.

Another activity could be the "Blow Your Own Horn" game, in which each person selects one occupation and brags about it in front of the class. The teacher begins the game by bragging in a dramatic way about the teacher's job. Then each pupil selects an occupation and brags about it as the teacher did.

RESOURCES/MEDIA: Large filing cards

EVALUATION: Each pupil should be able to list five ways in which one can obtain personal satisfaction from work.

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will become aware that each person is an individual who has different abilities, interests, needs, and values.*

STRATEGY: The teacher shows a film of an orchestral performance and tells pupils to observe the physical exertion made by the conductor and other members of the orchestra.

ACTIVITY: Using the film as a basis for discussion, the pupils relate their feelings about the life-style of people in an orchestra. The pupils take turns playing the role of the conductor and express their feelings about why the conductor may be perspiring (or showing other emotions). The class should be led to generalize about why different careers appeal to different people.

RESOURCES/MEDIA: Film showing makeup of an orchestra

EVALUATION: The teacher can observe pupil involvement.

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will become aware that skills can be utilized in both an occupation and in leisure time activities (such as a hobby).*

STRATEGY: The teacher invites a music teacher, band leader, piano tuner, instrument maker, music student, or parent who plays an instrument for enjoyment. The class discusses music as a career or music as a leisure time activity.

ACTIVITY: Using information from the class discussion, the pupils list the ways one can learn music for a job or a hobby. The pupils write on the theme "How Music Makes Our Lives Happier."

RESOURCES/MEDIA: Music teacher
EXPLORING MUSIC series

EVALUATION: The teacher evaluates individual essays.

SUBJECT AREA: Music/Language Arts

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will develop an awareness that occupations exist for a purpose.*

STRATEGY: The instructor teaches and directs actions for the song "Jack and Jill."

ACTIVITY: The pupils sing and pantomime the actions in the song. The teacher leads discussions on the following topics:

1. What work did Jack and Jill do?
2. What was the reason for their job?
3. Did their job help others? How?
4. How does your job in the class help others?

RESOURCES/MEDIA: Piano
Records
Tapes

EVALUATION: The teacher can observe the activities and oral responses of pupils.

SUBJECT AREA: Music/Language Arts

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will develop an awareness of the wide variety of occupations within the field of music.*

STRATEGY: The teacher plans to invite music resource teachers, parents, or music store personnel to speak about the many occupations in the field of music. The teacher arranges a field trip to a cultural center where pupils can observe a variety of musical occupations.

ACTIVITY: The pupils make a mural illustrating the different people involved in making music. A popular song can be selected, and the class can list the occupations that may have been involved before the song could be published.

RESOURCES/MEDIA:
Music teacher
Field trip
Music books
Art materials

EVALUATION: The pupils should be able to name five occupations in the field of music and discuss the different roles.

SUBJECT AREA: Music/Language Arts

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will become aware that people pursue occupations for many reasons; also, they will be able to express individual preferences about different tasks.*

STRATEGY: The teacher plays the recording *Peter and the Wolf* several times for the class.

ACTIVITY: The teacher leads the class in discussing the story in detail. An intriguing lesson can be developed by gearing the discussion to the distinct "styles" of the characters in *Peter and the Wolf.* The concept of occupational life-styles then can be introduced. The pupils may discuss styles that characterize actors, musicians, athletes, pilots, or other workers.

RESOURCES/MEDIA: Record player
Recording of *Peter and the Wolf*

EVALUATION: The teacher observes and evaluates pupil participation in discussions.

SUBJECT AREA: Music/Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will recognize that each individual can be unique and at the same time be able to blend together in harmony.*

STRATEGY: The teacher introduces the round or singing in unison; for example, "Row, Row, Row Your Boat." The teacher stresses important aspects such as group cooperation and blending with others. Each pupil can take a turn at leading the round.

ACTIVITY: The pupils are given an opportunity to become familiar with various rhythms, games, and melodies. Provided with basic skills of leading, they take turns leading the group in the various songs. Listening skills are developed. (If available, awards can be made.)

RESOURCES/MEDIA:
Piano
Records
Song books
Appropriate facility

EVALUATION: The teacher can observe the ability of each pupil to blend with others and to take a turn as song leader.

SUBJECT AREA: Art/Language Arts

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will demonstrate an awareness of and respect for family member occupations.*

STRATEGY: The teacher initiates a discussion about family members who work. A mural depicting the occupational roles of members of pupils' families is planned.

ACTIVITY: Drawings or paintings of family members can be created for murals. Pupils can make scrapbooks of people at work (children's drawings). Teacher and class can contribute to experience charts. The teacher writes stories that the pupils have shared regarding family members at work. Puppets can be used to act out the occupations of family members.

RESOURCES/MEDIA:
Art materials
Magazines
Films
Puppets

EVALUATION: The teacher evaluates the oral presentations made by pupils.

SUBJECT AREA: Art/Language Arts

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will be able to express a variety of career preferences and some insight into their choices.*

STRATEGY: The teacher tells the pupils that they are going to make "their own bags." The pupils look through old magazines and clip out numerous pictures representing careers they might like or dislike.

ACTIVITY: The pupils paste the pictures representing their likes on the outside of a paper bag and those representing their dislikes on the inside. The teacher shows them how to cut openings in the bag to make a mask. The careers they like will be in full view of everyone, and those they dislike will be hidden inside the bag. Their dislikes will be secret unless they choose to let a friend "put on the bag" to see what is inside.

RESOURCES/MEDIA: Paper bags large enough to fit over pupils' heads
Magazines from which pupils can cut career-related pictures
Ginn text (unit on helpers)

EVALUATION: The teacher evaluates pupil insight into choices.

SUBJECT AREA: Art/Language Arts

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to identify a variety of occupations that contribute to holiday celebrations and describe some ways in which these occupations are interdependent.*

STRATEGY: The teacher plans an art lesson around Halloween or any other holiday. (Any holiday can become a focal point for extending pupil awareness of the interrelatedness and interdependence of careers.)

ACTIVITY: The pupils decorate trick-or-treat bags. The teacher initiates a discussion about the different people needed to help if the class decided to have a Halloween party. The teacher might ask the following questions:

1. How many people would help us?
2. Which people might contribute by performing their daily jobs?
3. Which people might contribute for fun?
4. Who would provide service?
5. Who would provide goods?

The pupils can learn the answers to the above questions by interviewing parents, school personnel, and others; planning a party; and observing adults in work roles.

RESOURCES/MEDIA:
Lunch bags
Yarn
Construction paper
Paste
Scissors
Other art materials

EVALUATION: The teacher evaluates the verbal responses of pupils in discussing occupational interdependency.

SUBJECT AREA: Art/Language Arts

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to discuss ways in which occupation competency requirements influence one's education preparation.*

STRATEGY:	Each pupil prepares a speech about a job he or she would like, telling about the education needed to fulfill it.
ACTIVITY:	Members of the class construct mobiles based on the selected occupations. Requirements of the job make up the moving parts of the mobile.
RESOURCES/MEDIA:	Wire clothes hangers Art materials Books
EVALUATION:	Each pupil selects one occupation and tells how the competency requirements for that job influence educational preparation. (A mobile can also be selected. It is removed from the display area, and the same procedure is followed.)

SUBJECT AREA: Art/Social Studies

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *By observing an object, the pupils will be able to discern the materials and processes used to manufacture the components.*

STRATEGY: The teacher conducts a class discussion on the process of making a product. Flags from various nations can be identified. Attitudes toward those in other countries can be discussed.

ACTIVITY: The pupils describe the jobs involved in making a product. The steps in an assembly plant operation can be identified. Through role-playing the pupils trace the steps in the manufacturing of an object. Activities include cutting cloth, paper, and yarn; making fringe; tying flags to poles; and so forth. The class plays "What Happened to Me" in which each pupil pretends to be the object personified. The flags can be used for a flag program.

RESOURCES/MEDIA: Books
Materials needed for making flags

EVALUATION: The teacher evaluates each pupil's drawing of the manufacturing process for an object of his or her choice.

SUBJECT AREA: Art/Guidance

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to enumerate a variety of generalized job characteristics on which one can base comparisons of desirable careers.*

STRATEGY: The teacher introduces the idea of occupational clusters as a means of grouping jobs into families. The teacher elicits ideas and guides pupils into the concept of "career corners." The class can discuss why the career corners should be visually attractive (art discussion).

ACTIVITY: The pupils plan a career corner relating to a single cluster. The class works in small groups, committees, or task forces. Efforts can be coordinated with other classes. The pupils plan contents of each corner and execute the project. There are many alternatives to this activity. The corner can be changed each week to cover all clusters, and other displays can be set up in the library. The pupils collect pictures of occupations for the displays.

RESOURCES/MEDIA: Related books and games
Simple tools
On-the-job pictures
Display boards

EVALUATION: After visiting several career corners, the pupils are evaluated on the school subjects that were applied or incorporated in the work.

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *Each pupil will be able to describe and demonstrate three physical abilities he or she possesses.*

STRATEGY: The teacher plans games and other physical education activities that require a variety of physical skills (skipping, running, jumping, and the like). The teacher might plan a mini-Olympics, a series of tests or contests appropriate to the children's physical capabilities, such as standing and running broad jump, use of ladders and bars, jumping rope, and the like.

ACTIVITY: The class invites a high school athlete to come and teach a new game or skill. Using a full-length mirror, each pupil demonstrates his or her physical skills. Each pupil makes a "Book About Me" to illustrate his or her physical skills.

RESOURCES/MEDIA: Guest athletes
Self-Awareness Kit I (Science Research Associates, Inc.)

EVALUATION: The teacher evaluates each pupil's ability to recognize physical skills.

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Given the cluster which includes recreation, the pupils will be able to relate physical education activities in school to a variety of occupations in the field of recreation.*

STRATEGY: In planning the activities the teacher should include a discussion of locally available recreational facilities such as golf courses, tennis courts, riding stables, and bicycle trails. The recreational activities can be related to the physical education activities at school.

ACTIVITY: The pupils participate in the school's physical education program and take field trips to several of the local recreational facilities.

RESOURCES/MEDIA: Individuals from physical fitness organizations and community recreation departments
Films on recreation (camping, backpacking, skiing, and so forth)

EVALUATION: The teacher observes class discussions and evaluates pupil participation in physical education activities.

SUBJECT AREA: Physical Education/Health

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to list the reasons why one should develop one's own physical capability and endurance.*

STRATEGY:	The staff members plan units in physical education and health so that pupils develop an understanding of why individuals should be physically fit.
ACTIVITY:	The pupils participate in games and activities designed to test their endurance and agility. The health class can discuss ways to maintain a healthy body. The social studies class can discuss the physical requirements for occupations such as airline pilot, police officer, and the like.
RESOURCES/MEDIA:	Physical education facilities and equipment Films on physical fitness and use of equipment
EVALUATION:	The teacher evaluates the reasons pupils give for being and remaining physically fit.

SUBJECT AREA: Physical Education/Guidance

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will develop the ability to cooperate with others in the use of facilities and equipment.*

STRATEGY: The teacher discusses sharing, playing fair, and cooperating with others in physical education activities, and discusses how important these attributes are in the adult world. The teacher demonstrates the use of the jump rope, teeter-totter, and other equipment.

ACTIVITY: The class discusses sharing, working together in play activities, and being a good sport. Tossing a ball back and forth, using the teeter-totter, jumping rope with another person, and other activities help the pupils develop positive attitudes toward others.

RESOURCES/MEDIA: Physical education equipment and playground facilities

EVALUATION: The teacher observes each pupil's sharing attitude while participating in activities.

Level II, Grades Four Through Six

This section of the guide contains strategies for grades four through six in the following subject areas:

- Language Arts
- Mathematics
- Science
- Social Science
- Health
- Music
- Art
- Physical Education

Guidance components are adaptable to some of the units, and guidance specialists are listed as resources.

SUBJECT AREA: Language Arts

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will learn interviewing techniques from appropriate persons in a media field and will use these skills to research and report on life-styles of individuals in the community.*

STRATEGY: The teacher plans to lead a discussion on attitudes and life-styles. A speaker from business or industry is invited to present interviewing techniques. A mock interview can be held at the end of the presentation. The teacher helps pupils develop a set of questions to ask when interviewing personnel.

ACTIVITY: The class has a general discussion on attitudes and life-styles. Persons from the media field talk on interviewing skills and techniques. Individual parents and school personnel are interviewed. The pupils report to the class on the interviews they have conducted.

RESOURCES/MEDIA: Speakers
Films on various occupational life-styles
Printed materials

EVALUATION: The teacher evaluates the oral, written, or taped interviews on attitudes and life-styles of people in the community.

SUBJECT AREA: Language Arts

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Given three instructional periods in business-oriented telephone techniques, each pupil will demonstrate the ability to perform routine telephone tasks.*

STRATEGY: The teacher plans to show a film on the use of the telephone. Learning stations will be established for student use, and the students will visit the learning stations.

ACTIVITY: The pupils view films and read materials provided by the telephone company. They practice using the telephone in role-playing situations. A representative from the telephone company talks to the class.

RESOURCES/MEDIA: Films, tapes, and publications from the telephone company

EVALUATION: The teacher evaluates telephone skills of pupils.

SUBJECT AREA: Language Arts

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *The pupils will be able to recognize and list occupations that are oversupplied and undersupplied at any given time.*

STRATEGY: Each pupil is asked to make a list of occupations that are most in demand and those that are oversupplied. The instructor should discuss how career planning is affected by job supply.

ACTIVITY: The pupils can interview parents and grandparents about jobs that existed when they were young but no longer exist. A follow-up session could be about jobs that may exist in the future but not now. Class projects might include keeping a running graph of available jobs listed in local newspapers. Field trips can be taken to observe supply or oversupply of employment. The class can discuss changing jobs as related to various industries such as manufacturing, bottling, and packaging.

RESOURCES/MEDIA: Publications from local employment offices

EVALUATION: Each pupil should be able to list two jobs that are oversupplied and two jobs that are undersupplied and list ten job areas that appear to have a good future or a questionable future.

SUBJECT AREA: Language Arts

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The pupils will learn where to acquire information on specific occupations and will relate occupational choice to projected life-styles.*

STRATEGY: The instructor plans to teach basic skills in language arts. These skills include reading, writing, and researching.

ACTIVITY: Given the instruction for the development of skills in listening, speaking, reading, thinking, writing, researching, and interviewing, the pupils fill out a job application, ask questions, participate in interviews, or write letters for the purpose of acquiring information or pursuing a job. The pupils mentally project themselves about 15 years into the future and write a brief description of what they think their life-style might be then.

RESOURCES/MEDIA: Textbooks
Newspaper help-wanted section
Resumé forms

EVALUATION: The teacher reviews pupils' written projections, job applications, and resumés.

SUBJECT AREA: Language Arts

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *Each pupil will list ten occupations that require a knowledge of language skills.*

STRATEGY: The teacher discusses the importance of proper language usage in written and oral communication. The teacher plans lessons on grammar, punctuation, spelling, and oral reports, using vocabulary from occupational areas.

ACTIVITY: The teacher and pupils discuss occupations related to English. The pupils choose occupations to research. They present 2-minute oral reports and turn in written reports. They make a list of reading and writing skills that are common to most jobs.

RESOURCES/MEDIA: Poster showing English as a center circle with radiating circles including various occupational clusters related to English usage
Occupational Outlook Handbook. Published by the U.S. Department of Labor, Bureau of Labor Statistics, Washington, DC 20212.
Encyclopedias and other library references

EVALUATION: The teacher evaluates each pupil's written summary (approximately three paragraphs) of an occupation of his or her choice.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to demonstrate the use of metric measurement, describe how it is used in everyday life, and relate its use to the world of work.*

STRATEGY: The teacher develops a unit on metric measurement. A local auto dealer is requested to present a discussion of problems related to the maintenance of foreign cars. Pupils learn how metric measurement is used in the auto industry. Pupils can bring their bicycles to the classroom for metric measurement exercises.

ACTIVITY: The pupils study the metric system. They discuss the use of metric measurement in industry. Questions are developed for discussion with an auto dealer. Bicycles will be examined for parts that have metric measurements.

RESOURCES/MEDIA: Textbook
Metric measuring instruments
Metric tools

EVALUATION: The pupils are given a test on the use of the metric measurement system. The teacher observes and evaluates the class discussion.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *The pupils will develop an awareness of the elements of the decision-making process and will demonstrate the ability to solve mathematics puzzles.*

STRATEGY: The teacher uses mathematics puzzles (obtained from the curriculum office or from the mathematics teacher). The pupils are given strategies for the elements of planning and decision making as they apply to problem solving of appropriate games and puzzles. The teacher stresses the importance of reasoning ability in decision making.

ACTIVITY: The pupils participate in a discussion of approaches to planning, problem solving, and decision making. They will work out solutions to puzzles and games using mathematics skills. They discuss how decision-making skills apply to life situations.

RESOURCES/MEDIA: Textbook
Mathematics games and puzzles

EVALUATION: The teacher observes each pupil in group discussion and evaluates his or her ability to solve mathematics puzzles.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *Provided with the basic skills in computation with decimals and whole numbers, the pupils will be able to devise a money management system on a simulation basis.*

STRATEGY:	The teacher sets up a market place simulation and gives each pupil an established account with play money. Each pupil is responsible for maintaining a record of cash flow and an inventory of simulated products.
ACTIVITY:	Pupils take turns conducting business operations and acting as customers. Each pupil keeps accurate records of all transactions.
RESOURCES/MEDIA:	Simulated products Play money Ledger sheets
EVALUATION:	The teacher evaluates recordkeeping abilities of each pupil.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The pupil will demonstrate an understanding of the basic skills of carpentry.*

STRATEGY: The teacher plans the building of a small house in the classroom. The pupils interview parents and neighbors. The mathematics, science, and language art activities are related to construction skills.

ACTIVITY: Pupils learn how to use the basic tools of carpentry and practice the various skills in building a house. Construction industry volunteers, parents, and teachers could assist in the more complex tasks. The house when completed can be used as an independent study center. The pupils use cassette recorders to interview parents, neighbors, and others about the various aspects of the building trades.

Each pupil selects an occupation in construction and finds out as much as possible about it. The pupils can interview each other with cassettes, asking the same questions that they had asked their parents and neighbors earlier. The process is the important thing at this level. The class can tour the school plant and list all the tasks that have involved occupations in construction.

RESOURCES/MEDIA: Presentations by contractors, carpenters, and other construction workers
Building manuals
Basic hand tools

EVALUATION: Pupils are given pretests and post-tests on the identification of different construction jobs. These tests can be oral or written.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will demonstrate an awareness of the use of mathematical measurement in scale drawing.*

STRATEGY:	The teacher plans activities that are involved in the construction of a scale model city. City government, business, industry, residences, parks, schools, and other elements should be included in this "table top city."
ACTIVITY:	The pupils use basic skills of mathematics in laying out a city to scale. They plan the various components of a community and discuss the occupations involved. The skills of social sciences are incorporated. Art skills are used in making the model city and in laying out the streets, buildings, and parks.
RESOURCES/MEDIA:	Pictures and photos of city layouts Art supplies for construction of city Graph paper for scale layout
EVALUATION:	The teacher evaluates pupil participation in the project. The class is given a criterion-referenced test on the mathematics skills involved. The teacher observes the discussion on occupations.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *Each pupil will be able to select five occupations from a list of ten agribusiness-related occupations that would help to solve the world's food problem.*

STRATEGY: The teacher plans to show films contrasting surpluses and shortages of food; have the class discuss world food problems; and take the class on a field trip to a farm, cannery, farmers' market, or supermarket.

ACTIVITY: The class explores questions regarding where food is grown. The teacher and pupils discuss what will happen if the population continues to increase and the food supply does not. They discuss the use of modern techniques in agriculture.

RESOURCES/MEDIA: Presentations on agribusiness by high school 4H Club members
Talks by individuals from farm-related occupations
Materials from local agricultural agencies such as dairy associations, canned food processors, supermarkets, and the like

EVALUATION: The teacher evaluates the reports on specific occupations in agribusiness and the results of pretests and post-tests on the relationship of agribusiness and food supply.

SUBJECT AREA: Science/Language Arts

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The pupils will be able to have an understanding of some of the contributions of science to changes in occupations.*

STRATEGY: The instructor plans a unit on changing technologies. Inventions and their effects on work roles are discussed.

ACTIVITY: The class reads biographical material on some of the notable inventors who have contributed greatly to changes in society. Scientists who have made major contributions are discussed; and their education, work, and life-styles are explored. The class examines the changes that have been a result of scientific inventions.

RESOURCES/MEDIA: Biographies and other library materials
Films on inventions and developments in science

EVALUATION: The teacher evaluates the class discussion and the results of tests on scientific developments.

5—89445

SUBJECT AREA: Science/Language Arts

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will be able to list and describe ten occupations related to the care of domestic and wild animals.*

STRATEGY: The teacher plans to have the pupils discuss typical pets and the problems related to their care. The class can visit a veterinarian, pet store operator, blacksmith, game warden, or dog obedience trainer.

ACTIVITY: The pupils compile a list of occupations related to animal care. The class goes on field trips to the zoo, pet store, and animal hospital. Individual pupils may conduct a survey on the locations of animal food suppliers in the community. Stories about animals can be read.

RESOURCES/MEDIA: Speakers (veterinarians, pet store owners, and representatives from public agencies such as the Humane Society)
Novels about domestic animals (*The Dog Who Wouldn't Be* by Farley Mowat, *Rascal* by Sterling North, or *The Incredible Journey* by S. Burnford)
Novels about wild animals in their natural environments (*The Bears and I* by Robert Leslie, *Born Free* by Joy Adamson, or *Gifts of an Eagle* by Kent Durden)

EVALUATION: The teacher evaluates the group discussions. In a test on animal care occupations, each pupil selects a favorite animal and lists several occupations related to the care and feeding of that animal. In a vocabulary quiz, the pupil matches animal care terms with their definitions.

SUBJECT AREA: Science/Health

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *Each pupil will be able to name at least five occupations that depend on food production. The interactions between producer, processors, and consumers will be made evident.*

STRATEGY: The teacher plans to have outside speakers and to supervise the planting and maintaining of a garden. The teacher develops pupil awareness of the many occupations that are connected to the planting of a seed. While listing these occupations, the pupils select the areas they prefer.

ACTIVITY: The pupils prepare, plant, maintain, and harvest a garden on the school grounds. Personnel from a nursery or an agricultural office can explain the proper planting and maintaining of a productive garden. A grocer and/or fruit-stand operator can explain buying and selling procedures. A health food store person and/or nutritionist can explain preparation of food for consumption. Each pupil keeps a notebook of procedures explained by the speakers for future hands-on experiences in the school garden. A grocer might offer to buy produce and make the gardening venture pay for itself.

RESOURCES/MEDIA:
Brochures on the care of crops
Nursery items needed for planting a garden
Films from the Department of Agriculture
Films on nutrition
Marketing information

EVALUATION: The teacher evaluates individual results in garden projects and observes pupil response to speakers.

SUBJECT AREA: Science/Art

CAREER EDUCATION GOAL: Consumer Competency

OBJECTIVE: *Given a demonstration of space exploration on film, with emphasis on fuel of space vehicles, the pupils will become aware of the significance of energy, its sources, its utilization, and the energy crisis.*

STRATEGY:	The teacher plans a unit on space travel, relating it to energy and the energy crisis. The contributions of science to this problem should be included.
ACTIVITY:	The class studies space travel, natural resources, and petroleum supplies. Mockups of space vehicles are constructed. Posters of rockets and other modes of transportation can be developed. Diesel fuel, gasoline, liquid oxygen, and other types of fuel are studied.
RESOURCES/MEDIA:	Films from oil companies, aircraft manufacturers, and NASA Materials for artwork, mockups, and posters
EVALUATION:	The pupils are given a test on the different types of fuel. The teacher observes pupil participation in projects and evaluates individual posters.

SUBJECT AREA: Science/Guidance

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *Each pupil will identify at least five recent inventions and describe changes in the life-styles of people who use these inventions.*

STRATEGY:	The teacher develops a unit on inventions and inventors. Library and curriculum resource materials are made available for classroom use.
ACTIVITY:	The pupils use a text and supplementary materials that illustrate the relationship of science to occupations in the labor market. They learn about jobs and job changes that have resulted from inventions and scientific development. Individuals play the roles of people whose life-styles are affected by new inventions.
RESOURCE/MEDIA:	Textbook Films Materials on inventions and inventors
EVALUATION:	The pupils are tested on textbook assignments, and the teacher observes role-playing situations.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will be able to recognize and list 15 contributions that three chosen occupations have made to the advancement of society.*

STRATEGY: Each pupil is to research three occupations of his or her choice and list the contributions that these occupations have made to society.

ACTIVITY: The pupils research occupations from all levels of society; e.g., medicine, engineering, agriculture, and music. They trace the development of an invention that has made a contribution to society; e.g., the light bulb, telephone, and automobile.

The pupils form small groups to discuss the contributions of a particular occupation. Speakers can be invited to discuss commercial art, product promotion, design, and the like.

RESOURCES/MEDIA: Encyclopedias
Books on inventions, music, art, medicine, and the like

EVALUATION: The teacher evaluates the lists of contributions submitted by pupils and the extemporaneous talks on the topic "Occupations Exist for a Purpose."

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to identify different photographs of occupations related to the construction industry.*

STRATEGY: The teacher describes the construction trades and occupations in relation to the movement of people from rural to urban areas. Films and pictures illustrating city growth patterns can be shown. The teacher helps pupils develop a list of questions to be used for interviewing workers and other guest speakers.

ACTIVITY: The pupils make a list of the crafts that are related to the construction industry. Construction company workers and representatives can be invited to participate in class discussions. The pupils can take a field trip to several construction sites and make lists of occupations they observe.

RESOURCES/MEDIA: Films and other materials on the construction industry

EVALUATION: The pupils are shown photographs of construction workers and are asked to identify them.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will develop the fundamental skills of using maps and will identify specific occupations that exist in certain geographic regions of the country.*

STRATEGY: The teacher plans to present the geographic concepts of each region of the country and the basic ideas concerning the economy of each area.

ACTIVITY: Each pupil writes the name of an occupation on a slip of paper. These occupations will have been discussed in the lessons on the geography and economy of the nation. The pupils draw slips of paper from a box and fasten these to the map. The slips might read, "I am a farmer, I raise corn and pigs. The soil is rich, and the summers are hot" or "I work on an offshore oil rig."

RESOURCES/MEDIA: Map of the United States
Film of major aspects of different areas of the country

EVALUATION: The teacher determines the correct location of occupations. There are many possibilities; however, the pupils should be able to give reasons for selecting a particular location for an occupation.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *Each pupil will be able to list five responsibilities of a small business enterprise.*

STRATEGY:	The teacher plans to lead a discussion on types of small businesses. The pupils prepare a list of questions to ask owners of such businesses. Representatives of small businesses should be asked to participate in classroom discussions. Visits can be made to several local business establishments.
ACTIVITY:	The pupils discuss and list different types of small businesses. They visit several local business operations. The class can view slides and films. The advantages and disadvantages of owning a small business can be listed.
RESOURCES/MEDIA:	Speakers from local businesses Brochures from chambers of commerce Films from library
EVALUATION:	The pupils are asked to name three businesses and list five responsibilities of a small business.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Consumer Competency

OBJECTIVE: *After selecting certain occupational clusters for study, the pupils will determine the socioeconomic status of workers in various occupations.*

STRATEGY: The teacher plans a unit on values, incorporating the concepts of consumer awareness and monetary gain as aspects of occupational choice. The contributions of workers and work to society are to be discussed.

ACTIVITY: The pupils investigate the salary ranges of the occupations they have selected. Workers are invited to visit the class and be interviewed.

Jobs can be listed in accordance with the contributions they make to society. The pupils discuss values and valuing as they pertain to occupational choice, purchasing power, and contributions to society.

RESOURCES/MEDIA: Guest speakers
Charts, posters, and bulletin boards depicting jobs, salaries, and purchasing power of individuals who have various jobs

EVALUATION: The teacher observes the group discussions and evaluates efforts the pupils have made on their projects.

SUBJECT AREA: Social Studies/Language Arts

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The pupils will be able to match occupations to educational preparation.*

STRATEGY: The teacher prepares pupils to interview school and community personnel in regard to educational preparation for jobs. This activity will develop an awareness that occupational requirements influence the content and direction of educational preparation.

ACTIVITY: The pupils interview school and community personnel. The interviews should reveal the kinds of training that are required for each job.

The class views films or filmstrips dealing with occupational requirements.

RESOURCES/MEDIA: School personnel
Community personnel
Films and filmstrips

EVALUATION: The pupils select three occupations and list the educational requirements for each.

SUBJECT AREA: Social Studies/Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *Each pupil will be able to identify personal aspirations and abilities as they relate to a tentative career choice.*

STRATEGY: The teacher helps pupils relate individual abilities to occupational areas. The social studies curriculum provides much in the way of opportunities for pupils to become aware of personal requirements for various occupations.

ACTIVITY: The class discusses individual differences and societal patterns. The pupils assess themselves and analyze the relationship between personal goals, abilities, and interests.

The pupils should be able to identify strengths and weaknesses and understand the uniqueness of individuals.

As a result of exposure to various occupations and life-styles in the home, the school, and the community, the pupils should be able to make some tentative choices of educational and occupational goals.

RESOURCES/MEDIA: People in the home, the school, and the community
Guidance specialist
Charts and posters of occupational clusters
Films, slides, and other media presentations of the cluster areas

EVALUATION: The teacher evaluates pupil participation in the class discussion. Each pupil's personal interest list as it relates to the tentative selection of occupational areas is checked by the teacher.

SUBJECT AREA: Health

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will identify five skills or abilities that they feel they have and match these skills or abilities with one or more health occupations that require these skills.*

STRATEGY: The teacher explains the purpose of the activity and facilitates a discussion on recognizing individual skills and strengths. The pupils select one or more occupations that require these skills. The teacher helps the pupils assess their strengths and the relationship of these strengths to possible career choices.

ACTIVITY: The pupils list five personal skills or abilities or things they feel they do well. They pair off, exchange their lists, and discuss them. They write about an activity and their feelings and reactions to it.

RESOURCES/MEDIA: Library materials

EVALUATION: The teacher observes the group discussions and evaluates the effectiveness of the lesson through written student assignments.

SUBJECT AREA: Health

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupil will be aware that good health is essential in any occupation, and that there are many persons who help us maintain good health.*

STRATEGY:	The teacher initiates a class discussion on people who help us maintain our health.
ACTIVITY:	The pupils investigate and research careers that are related to soap and water (barber and beautician), clothes (manufacturer and salespeople), or washing machines (salespeople). They research the "basic foods" and the people who work with food (farmer, rancher, baker, nutritionist, and the like).
RESOURCES/MEDIA:	Health text Field trip to health-related operations
EVALUATION:	The pupils should name ten people in a health-related field and describe how these persons help us maintain good health.

SUBJECT AREA: Health

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupil will be able to identify at least five areas of concern dealing with health and sanitation in restaurant operations. (These concepts also apply to the home.)*

STRATEGY: The teacher plans a class discussion on health and hygiene. The pupils will research bacteria and food poisoning. A field trip to a restaurant will provide information on what employees do to protect the customer.

ACTIVITY: The class reads a unit in text on bacteria. The class discussion focuses on food spoilage; refrigeration; the use of appropriate cleaners for utensils; and the maintenance of kitchens, bathrooms, and floors.

After a field trip to a nearby restaurant, the pupils discuss what the employees do to prevent hazardous situations regarding cleanliness and sanitation.

RESOURCES/MEDIA: Speakers
Textbooks
Trip to a restaurant

EVALUATION: The pupils are given a test on the lessons in the text, and the teacher observes class discussion.

SUBJECT AREA: Health/Art

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will develop a list of health and safety habits and relate these to the community agencies that promote health and safety.*

STRATEGY: The teacher develops a unit on those who play vital roles with regard to the health and safety of members of the community. These could include employees of the fire department, police department, public health and sanitation department, and the like.

ACTIVITY: The pupils research each area of service to the community by the various agencies and determine the roles of those agencies. Posters and artwork can be developed. Lists of health and safety habits and rules can be developed by pupils. The responsibilities and roles of agencies and members of those agencies should be defined.

RESOURCES/MEDIA: Films on community agencies
Visits to classroom by community agency representatives
Poster materials

EVALUATION: The teacher observes class participation and evaluates the lists of health and safety procedures submitted by pupils.

SUBJECT AREA: Health/Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *Each pupil will be able to give three reasons why one should examine one's strengths and limitations.*

STRATEGY: The teacher introduces materials that deal with the importance of examining one's strengths and limitations (physical, emotional, and social).

ACTIVITY: The class can set up a panel to discuss an imaginary person. The members of the panel list this person's strengths and weaknesses, and the pupils discuss the kind of self-image this particular person would have.

Autobiographies can be written, and each pupil can illustrate a different emotion.

RESOURCES/MEDIA: Guidance department personnel
Health textbook
Films and filmstrips

EVALUATION: The teacher evaluates essays on the reasons why one should examine one's strengths and weaknesses.

6—89445

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will develop an understanding of the occupational opportunities in the field of sound recording and reproduction.*

STRATEGY: The teacher develops an activity centered on a vocal music presentation. The program can be taped or recorded on videotape if the proper equipment is available. A technician from a local radio or television station can be requested to explain the process of recording and to describe the roles of the technicians involved in this process.

ACTIVITY: The pupils participate in a musical production. They are given an opportunity to ask questions in a discussion of recording techniques with a representative from radio or television. They also hear and/or view their own performance.

RESOURCES/MEDIA: An acoustically prepared room for recording with a tape recorder or videotape equipment

EVALUATION: The teacher evaluates the performance of the pupils. The teacher also evaluates how well they understand the technical aspects of the recording process.

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Provided an opportunity to participate in an instrumental music activity, the pupils will be able to further investigate the production of instruments.*

STRATEGY: The teacher plans to contact a music instrument company to arrange for a classroom presentation. Brochures and films can be obtained from the major companies, and representatives can be invited to explain the process of instrument production.

ACTIVITY: The pupils view films on instrumental music. They are given an opportunity to list questions they might have on the production of musical instruments. They discuss the various occupations in the production and distribution of musical instruments.

RESOURCES/MEDIA: Musical instruments (owned by pupils or supplied by school for orientation purposes)
Films from a manufacturer or distributor of musical instruments

EVALUATION: The teacher observes the participation by pupils in the instrumental activity and in the discussion of films. The pupils also are observed as they question the representatives of the music companies.

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will develop an appreciation for the works of people in the field of music and a positive attitude toward the contribution of music to various cultures.*

STRATEGY: The teacher provides books, films, and slides that contain biographical material on people in the music world. Records and tapes of music from various cultures are also used.

The teacher researches those cultures that have had specific music patterns. The class listens to the songs of the field worker, the range cowboy, the riverboat worker, and the like. The pupils learn the songs and discuss the value of music to the workers.

ACTIVITY: The pupils read, view, or hear about the works of various musicians and relate these to individual cultural patterns.

Each pupil should become familiar with rhythms, games, and songs from various cultures and be able to discuss the similarities and differences of music from various countries.

Besides participating in group vocal activities, the pupils can listen to records of some of the music that has evolved from the working songs of past years and of other cultures. They can discuss the feelings they have when listening to these records.

RESOURCES/MEDIA: Books
Films and slides
Records and tapes

EVALUATION: The teacher observes pupils as they participate in discussions after listening to records and tapes of music from various countries and cultures.

SUBJECT AREA: Music/Language Arts

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to give reasons that show an understanding of how personal factors may affect a career.*

STRATEGY:	When presenting a new music lesson, the teacher initiates a class discussion about the kind of person that may be interested in pursuing a career in music.
ACTIVITY:	The pupils are assigned to read about a career in music. A topic for a class discussion could be, "What type of person is successful in this field?"
RESOURCES/MEDIA:	Library books
EVALUATION:	The class develops a list of ten or more personal factors that influence an individual's career.

SUBJECT AREA: Music/Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *Each pupil will participate in vocal music activities and develop an understanding of the expressive qualities of music.*

STRATEGY: The pupils learn songs that convey various tones, moods, and feelings (happy, sad, festive, patriotic, and so forth). They will be asked to discuss their feelings after the various types of songs have been sung.

ACTIVITY: The pupils sing songs that involve various moods and feelings. They are given an opportunity to discuss how they feel about the singing experience. They discuss how music is a way of expressing feelings in a unique manner.

RESOURCES/MEDIA: Guidance specialist
Piano
Music

EVALUATION: The teacher will observe each pupil's participation in the singing and the way in which each pupil verbalizes feelings about the music activity.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will recognize that art skills can be applied to a variety of occupational areas.*

STRATEGY:	The teacher organizes a unit around form, color, and texture. In discussing how these concepts relate to occupational areas, the pupils develop an awareness of the many applications of art skills. They are asked to select and develop an art project that involves skills that might be used in a work situation.
ACTIVITY:	The pupils develop an art project that involves paints, clay, papier-mache, or other media. They discuss the relation of art skills to occupational roles and determine how to conduct further study of an area of tentative occupational interest.
RESOURCES/MEDIA:	Art supplies and equipment
EVALUATION:	The teacher evaluates the finished projects and observes the class discussion.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *On completion of the unit, each pupil will have constructed a weaving loom and produced a completed product, such as a placemat, pillow cover, or wall hanging.*

STRATEGY: The teacher plans to have a discussion session with the objective of developing awareness of occupational roles. Weavers are invited to the classroom to demonstrate their craft and discuss techniques and types of materials used.

ACTIVITY: The pupils construct a simple weaving loom. As the project proceeds, the pupils should become aware of weaving as a vocation, leisure activity, or avocation. They are shown a variety of materials that can be used in weaving. They should develop an awareness of the application of weaving skills and an awareness of individual skills.

RESOURCES/MEDIA: Weavers
Yarns and other weaving materials
Boards, nails, saws, and so forth

EVALUATION: The teacher evaluates the loom construction project and the finished woven products. The pupils should learn at least ten basic terms used in weaving.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will list at least three examples of how life-style is related to occupations in the field of art.*

STRATEGY: The teacher plans to lead a discussion to develop criteria for art projects. Each pupil plans an individual project after consulting with the teacher. The whole class evaluates the individual or small group plans.

ACTIVITY: Individuals or groups develop art projects that portray characterizations of how life-style is related to occupations. The pupils develop criteria to be used in the evaluation of individual projects and the selection of the best projects for display.

RESOURCES/MEDIA:
Pictures
Paintings
Drawings
Biographies of persons in the field of art

EVALUATION: The teacher evaluates the art projects.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each pupil will demonstrate through an art medium the use of art or design as used in our society.*

STRATEGY: The teacher plans to show slides of buildings, gardens, and the like. The pupils can participate by taking the pictures and preparing the slides. This should motivate their responses. The teacher asks questions about the kinds of art or design seen in the slide presentation.

Each pupil can select an occupation in the field of art or where art is used for the purpose of examining all aspects of that occupation.

ACTIVITY: The pupils brainstorm about the use of art in architecture, interior decorating, billboard advertising, magazines, clothing design, table settings, lettering, and automobile design.

Each pupil chooses one career or occupation and, with drawings or pictures, shows how art plays a part in this career. The pupil might select automobile designing, sign painting, business office designing, landscape gardening, and the like.

The class can go on a walking field trip and take pictures of buildings and offices in the community (department store, grocery store, and the like).

RESOURCES/MEDIA: Films and slides
Magazines

EVALUATION: The teacher evaluates the finished projects.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The pupils will be able to identify occupations that involve art in the field of advertising.*

STRATEGY:	The teacher plans a unit on the various media, using the primary and secondary colors.
ACTIVITY:	The pupils select colorful advertisements from magazines to make collages of the possible occupations in the field of advertising. In another project individual pupils might develop color combinations and designs for printing on T-shirts. The art class could develop the T-shirt printing into a money-making project by selling decorated T-shirts to other pupils.
RESOURCES/MEDIA:	Magazines T-shirts
EVALUATION:	The teacher evaluates collage patterns, color combinations, design, and so forth. The T-shirt projects also are evaluated. Reactions of pupils to the T-shirt designs should help the teacher evaluate them. The pupils should be asked, "Is it wearable?"

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *Each pupil will develop leadership skills by acting as group leader or captain of a team for at least one day.*

STRATEGY: The pupils take turns filling the positions of responsibility. The positions of leadership are basic to an understanding of management activities in real-life adult situations. The instructor and pupils discuss the basic concepts of leadership.

ACTIVITY: By participating in physical education activities, the pupils should develop an understanding of the roles of leaders and the way people respond to leaders.

The class discusses leadership and the responsibilities of those in leadership positions.

RESOURCES/MEDIA: Athletic equipment

EVALUATION: The teacher observes each individual in the role of leader and as a participant in the class discussion of leadership.

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will recognize the differences of the physical and emotional requirements for individual and team sports.*

STRATEGY:	The teacher plans individual and team sport activities. The class discusses the physical skills that are required for each activity and lists the attitudes and understandings participants need to have for success.
ACTIVITY:	The pupils participate in individual and team activities. They talk to older family members, friends, and neighbors to determine attitudes, likes, dislikes, reasons for playing, and so forth. They learn that each person has his or her own preference for an athletic or recreational activity.
RESOURCES/MEDIA:	High school, college, or professional athletes from various sports
EVALUATION:	The teacher observes the progress pupils are making in individual and team sports and gathers data from pupils on individual preferences and reasons for such preferences.

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Given a list and a description of various recreational activities, each pupil will select those that can be pursued in physical education classes and determine how they relate to individual interests.*

STRATEGY:	The teacher will help pupils recognize how physical education activities can be utilized in leisure activities.
ACTIVITY:	The pupils participate in physical education activities of their choice, and they relate their choice to the life-style and leisure activities of adulthood. The pupils explore and discuss adult leisure activities as related to adult work roles.
RESOURCES/MEDIA:	Physical education equipment and facilities Charts and graphs that depict occupational areas, leisure activities, and related physical education activities
EVALUATION:	The pupils prepare a self-assessment rating of how their interests and abilities correlate with recreational and leisure activities in projected adult roles. The teacher observes group participation.

SUBJECT AREA: Physical Education/Language Arts

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The pupils will be able to distinguish individual differences in interests, abilities, attitudes, values, and aptitudes*

STRATEGY: The teacher plans self-awareness and/or decision-making activities.

ACTIVITY: Each pupil selects one of several gym activities. After the free-choice gym period, the pupils discuss why they think certain activities were chosen by different individuals. The teacher can introduce the terms *interest, ability, attitude, value,* and *aptitude.*

In a discussion of values, the topics can include safety, fairness, sharing, and regard for the feelings of others. The pupils should read books that develop attitudes; e.g., *The Popcorn Dragon* by Jane Thayer.

RESOURCES/MEDIA: Books
Films

EVALUATION: Each pupil should be able to list at least ten differences in attitudes, interests, abilities, and values between two characters in a film or a story.

SUBJECT AREA: Physical Education/Guidance

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The pupils will be able to describe the importance of teamwork in athletic activities and to relate this to life situations.*

STRATEGY:	The teacher discusses the importance of teamwork, sportsmanship, and fair play. Team activities should be planned as part of the physical education program.
ACTIVITY:	The pupils participate in team sports. A discussion of the importance of good attitudes, teamwork, and good sportsmanship should include the carry-over of these ideas to real-life situations. Professional athletes might be available for presentations to the class. Films of team sports can be shown.
RESOURCES/MEDIA:	Guidance specialist Films Athletic equipment
EVALUATION:	The teacher observes pupil participation in team activities and group discussions and evaluates papers on the importance of good attitude, sportsmanship, and teamwork.

SUBJECT AREA: Physical Education/Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *Each pupil will participate in physical activities that develop perceptual and kinesthetic skills in order to build his or her own concept of self.*

STRATEGY:	The teacher plans to discuss with pupils the concept of individual differences. The pupils should learn that the amount of skill a person develops depends on his or her capability and effort.
ACTIVITY:	The pupils discuss the activities they plan to engage in, and they plan individual and small group participation. A professional athlete might be invited to discuss sportsmanship, training, teamwork, and individual differences. The pupils participate in skill-building activities.
RESOURCES/MEDIA:	Guidance specialist Books on athletics Films of professional games Athletic equipment
EVALUATION:	The instructor evaluates pupil progress, taking into account the age, height, weight, and physical tone of each individual.

7—89445

Level III, Grades Seven and Eight

This section of the guide includes strategies for grades seven and eight. Some are designed to include guidance components, and counselors are listed as resources. The major subject areas are the following:

English
Mathematics
Science
Social Studies
Music
Art
Physical Education

Career centers are listed as resources, although in some schools the library serves this function.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will be able to identify those aspects of English skills that are needed for performing a specific occupation.*

STRATEGY: The teacher introduces a game in which students have to identify occupations that require English skills. A suggested list of occupations is as follows:

Vocational counselor	Song writer
Typist	Clergyman
Lawyer	Librarian
Personnel manager	Pharmacist
Poet	Editor
Employment manager	Politician
Retail manager	Stenographer
Auctioneer	Reporter
Social worker	Proofreader
Teacher	Receptionist
Salesperson	Radio announcer

ACTIVITY: Each student is assigned to be a reader, speaker, listener, or writer. Groups of students try to claim an occupation as belonging predominately to their English skill by telling how their area relates to the occupation. The group with the highest number of occupations wins the game.

RESOURCES/MEDIA: Library materials
Career center

EVALUATION: The teacher evaluates student participation.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *Each student will list five personal characteristics and values that are related to the success of a famous person.*

STRATEGY: Each student selects a name from a list of personalities and presents an oral bibliography. Sufficient materials should be available in the library.

The students should organize and summarize their information on 4 by 6 cards. One side is used for notes, and the other side is used for introductory and concluding sentences and for sources of reference.

ACTIVITY: The students use library resources to obtain information on their selected personalities. They look for information about the personal attributes that made these people successful. Each student should use at least two sources of information.

After the oral reports are given, the class can discuss the ten most valuable attributes to success.

RESOURCES/MEDIA: Library reference materials

R. C. Pooley and Others. *Projection in Literature.* Palo Alto, Calif.: Scott, Foresman, & Co., 1967, pp. 129 and 514.

J. E. Warriner and S. Y. Laws. *English Grammar and Composition 7.* Petaluma, Calif.: Harcourt Brace Jovanovich, Inc., 1973, pp. 325–41.

EVALUATION: The teacher evaluates student reports.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will describe at least a dozen occupations that have been in existence for less than 20 years and will list four vocabulary terms created for one of these occupations.*

STRATEGY: The teacher plans to invite representatives from businesses, research and development companies, and governmental agencies to speak on occupations of the future.

A field trip can be made to a business that was nonexistent a few years ago.

ACTIVITY: The students compile a list of relatively new occupations; e.g., player representative for professional sports stars, color television technician, paramedic, astronaut, and rotary engine mechanic.

Each student selects a new occupation and compiles a related vocabulary list. For example, if a student selects computer programming, the list might include vocabulary terms such as *digital, binary, software, hardware, printout,* or *solid state circuitry.* The students share their lists with the whole group.

The students survey family members and neighbors to learn any new vocabulary terms related to their occupations. These terms are then shared with the class.

RESOURCES/MEDIA: Guest speakers

EVALUATION: The teacher evaluates the student's ability to match new vocabulary terms with the appropriate new occupations and to use selected terms in a short composition.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will perform proofreading tasks, demonstrating accuracy, and will be able to describe at least three careers in which proofreading skills are necessary.*

STRATEGY: The teacher plans to have students interview representatives from occupations that require proofreading skills; e.g., newspaper copy editor, technical writer, and legal secretary.

ACTIVITY: The students read and correct newspaper articles that have been rewritten to include errors in spelling, punctuation, grammar, and usage. Galley proofs from a printing company or proofs from the school paper or yearbook are examined. Students compile a list of specific occupations that require proofreading skills. Examples of typographical or proofreading errors can be found in local newspapers.

RESOURCES/MEDIA: Samples of galley proofs obtained from local publishing houses
Representatives from local newspapers, publishing companies, and advertising agencies

EVALUATION: The teacher evaluates each student's ability to proofread and correct errors in spelling, punctuation, grammar, and usage. The need to strive for 100 percent accuracy should be emphasized; however, the teacher should set goals for accuracy on the basis of individual and group abilities.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The students will be able to write essays based on their awareness of a particular occupation's contribution to society.*

STRATEGY: The teacher plans field trips to a hospital, sewage treatment plant, water treatment plant, food processing plant, and city or county government offices.

ACTIVITY: The students are asked to evaluate the value of a variety of occupations.

The class discusses major strikes, emergencies, or other crises in society and how they have affected lives. Each student writes a "What would happen if . . . ." paper, describing the effects of the cessation of a particular occupation or service in the community.

RESOURCES/MEDIA: Guest speakers from local government, business, and industry

EVALUATION: The teacher evaluates student papers.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The student will be able to name at least five occupations for which creative writing ability is an important asset.*

STRATEGY: The teacher or students will invite authors, journalists, poets, publisher's representatives, or screen writers to talk about their work.

ACTIVITY: The students interview local authors and publisher's representatives to learn about the different stages of the writing process, from the author's original inspiration to the manuscript's published form. The class should be given an opportunity to examine actual manuscripts that have been published.

Each student should write a poem, short story, or essay and submit the manuscript to a publisher. Publications such as *Literary Market Place, 1976-77**, and *Writer's Market, 1976***, contain valuable information for writers.

RESOURCES/MEDIA: Samples of literary manuscripts with publisher's annotations obtained from publishing firms

EVALUATION: The teacher evaluates the results of an oral quiz or written examination on career opportunities for writers.

**Literary Market Place, 1976-77.* Ann Arbor, Mich.: R. R. Bowker Co., 1976.

***Writer's Market, 1976.* Edited by Jane Koester and Rose Adkins. Cincinnati: Writer's Digest, 1975.

SUBJECT AREA: English/Guidance

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *The students will be able to identify their own leisure-time interests and will be able to analyze the effects of certain occupations on their leisure-time activities.*

STRATEGY: The teacher plans a class discussion on the kinds of activities in the leisure-time category. The instructor should stress that personal interests may or may not be related to specific jobs. A job may have certain time commitments that interfere with personal time. Other jobs may have emotional and social commitments that cut into one's own time. The teacher selects 15 occupations from which students may choose. These might include a fireman, military officer, secretary, teacher, clergyman, miner, and so forth.

ACTIVITY: Each student makes a personal profile including hobbies at home and away from home. For each interest the student should research the following: (1) time commitment; (2) cost; (3) amount of travel involved; (4) amount of danger involved; and (5) year-round or seasonal activity.

The students choose two jobs from the teacher's list and describe how each job does or does not affect their profile of personal interests.

RESOURCES/MEDIA: Librarian
Counselor
Career center

EVALUATION: The teacher evaluates the written reports on the relationship between jobs and personal interests.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will increase awareness of the variety of occupations by becoming familiar with the cluster classification of jobs and relating specific mathematics skills to job entry requirements.*

STRATEGY:

The students will be asked to list the various occupations of family members, relatives, neighbors, or friends.

The teacher introduces the concept of job classification, with specific emphasis on the cluster system. The 15 occupational clusters adopted by the U.S. Office of Education are introduced and adopted by the class as the system to be used during this activity.

The students will be provided an outline describing this project activity, guidelines for conducting an interview, and a form letter to be given to the person being interviewed. Each student plans to interview a family member, neighbor, or friend to learn about various occupations.

ACTIVITY:

Through class discussions students learn to classify jobs of people they know into the 15 U.S. Office of Education job clusters.

Each student chooses an individual to interview about his or her job, with particular emphasis on the mathematics skills required for the job. The other skills and knowledge required to do the work, the job cluster category, and the skill and/or educational entry-level requirements also are discussed in the interview. After the interview each student reports the results to the class.

Each student writes up three mathematics problems that are related to the job of the person interviewed. The whole class works on the problems.

Discussions of job classifications of people interviewed and entry-level requirements are an ongoing part of the course curriculum.

RESOURCES/MEDIA:

Community resource people
U.S. Office of Education publications on job clusters

EVALUATION:

Each student should complete one interview and write a report on the results. The student should be able to categorize jobs into a cluster system.

SUBJECT AREA: Mathematics/Business Education

CAREER EDUCATION GOAL: Consumer Competency

OBJECTIVE: *Each student will be able to identify two methods of borrowing money for the purchase of a car.*

STRATEGY: The teacher plans to have each student select a new or used car that he or she would buy and explain how the car would be financed. Each student is to select two methods of financing a car from ten methods presented. The use of percentage in purchasing, the benefits of comparison shopping for major consumer items, and the relationship of computational skills to personal economic issues are to be demonstrated through this activity.

ACTIVITY: The class visits two new car agencies and two used car agencies and receives information pertaining to the purchase of new or used cars.

An auto loan officer from a local bank visits the classroom to explain loan applications, interest rates, and the like. The students fill out their own applications.

A loan officer from a private lending agency visits the classroom to explain loan applications, interest rates, conditions of loans, and the like.

Each student develops a personal plan for purchasing a car, completes an application for a loan, describes the two selected methods of borrowing the money for the purchase, and details the percentage of interest to be paid over the duration of the loan and all other computational data required.

RESOURCES/MEDIA: Material from automobile manufacturers, the State Department of Motor Vehicles, automobile clubs, professional credit unions, local savings and loan companies, and local banks. (Classified sections of newspapers and *Kelly Blue Book* are valuable resources.)

EVALUATION: The students are evaluated on completion of their project assignments. The students' automobile purchase plans are grouped according to methods selected and presented orally, in student panel format, to the rest of the class.

SUBJECT AREA: Mathematics/Industrial Arts

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will be able to perform a number of specific measurement activities required in various construction occupations.*

STRATEGY: The teacher plans to instruct students in the various measurement techniques that are used to determine height, length, angles, and the like.

Groups of students are to be given specific problem-solving assignments including problems available in mathematics texts and problems that involve measurement of various school-site facilities; e.g., classrooms, school buildings, fields, athletic facilities, and the like.

Members of the industrial arts staff are to be invited to discuss the various occupational roles performed at a construction site, and the use of measurement by the various workers; e.g., architects, carpenters, plumbers, electricians, and so forth. A field trip to a construction site is planned in cooperation with the industrial arts staff.

ACTIVITY: The class receives instruction in a variety of measurement techniques. The students perform a specified number and variety of measurement activities from textbook problems, school-site measurement tasks, student-initiated measurement tasks, and the like.

Each student chooses at least one occupational role in construction and researches it; i.e., mathematics skills required, educational preparation, training requirements and facilities, and assets and liabilities of the job. The students should develop a list of questions to ask the workers during the construction-site visit. The questions might be about measurement techniques, tools, mathematics as applied to the job, and the like.

RESOURCES/MEDIA: Industrial arts staff
Textbooks
Measurement tools
Materials on careers in construction
A construction site

EVALUATION: The teacher evaluates each student's ability to complete at least ten measurement problems. The students also write reports on the relation of measurement skills to jobs in construction.

SUBJECT AREA: Mathematics/Guidance

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *For a selected career that requires the use of mathematics, the students will be able to (1) indicate the level of mathematics needed to perform in that career; and (2) relate their individual mathematics ability to their aptitude for that career.*

STRATEGY: The teacher plans to administer a self-scoring diagnostic test in mathematics. Individual analysis sheets can be developed to profile each student's strengths and weaknesses in mathematics, career planning ideas, and the like. Various guest speakers can discuss mathematics as used in their work.

ACTIVITY: The students take diagnostic tests and score the results. They profile their mathematics strengths and weaknesses in preparation for analyzing ten careers for which they are prepared mathematically. They analyze ten additional career areas that require more advanced skills in mathematics and track a plan for preparing for each one.

The students develop and maintain a bulletin board or display of careers that require mathematics. The careers are divided equally among the students for research regarding the mathematics skills needed for job performance. The bulletin board display can be rearranged to classify careers according to mathematics skills needed for job performance; i.e., basic computational skills, level of high school mathematics, or advanced mathematics.

Individual or small group field trips can be made to business sites to observe the use of mathematics in all types of jobs. The students' observations are added to the bulletin board display.

Each student presents a brief description of one job area of interest, the level of mathematics required, and his or her plans for meeting the requirements.

RESOURCES/MEDIA: Diagnostic test of basic mathematics skills
Self-analysis sheet
Local newspapers
Career center

EVALUATION: The teacher reviews individual plans for achieving career goals. Each student should be able to list 25 occupations that require mathematics and to classify a list of 20 careers in accordance with their mathematics requirements.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *The students will be able to state the occupations involved in getting a product from the producer to the consumer.*

STRATEGY:	The teacher plans a field trip to a local dairy or poultry farm.
ACTIVITY:	The students research the steps involved in getting a locally grown product to the grocery store. They interview the persons involved in producing and distributing the product. The students try to determine the most economical buy at the market. They learn about egg prices, the butterfat content of milk, and the marketing of dairy and poultry products.
RESOURCES/MEDIA:	U.S. Department of Agriculture speakers High school agriculture teacher Future Farmers of America students
EVALUATION:	The class is given a pretest and a post-test on dairy and poultry products.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will be able to describe the occupations involved in growing fruits and vegetables.*

STRATEGY:	The class plans to obtain a small plot suitable for growing a small garden.
ACTIVITY:	The students prepare the plot and select the seeds for a vegetable garden. They discuss germination and the use of insecticides. The students mount insects found in the plot. They then list and describe the occupations related to growing plants; e.g., entymologist, plant pathologist, and the like.
RESOURCES/MEDIA:	High school agriculture teacher Future Farmers of America publications 4-H club members U.S. Department of Agriculture publications
EVALUATION:	The students are given pretests and post-tests on plant growth.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The student will become aware of various fields in medicine and be able to report on two of them.*

STRATEGY: The teacher plans to have the class discuss medical occupations and prepare for a field trip to a hospital. Speakers can be invited to talk about their occupations.

ACTIVITY: The students discuss their ideas about the various fields of medicine they have investigated. In addition, they can invite a fireman, paramedic, ambulance driver, lab technician, x-ray technician, electronics technician, chef, dietician, physical therapist, nurse's aide, business office worker, or student volunteer to address the class.

RESOURCES/MEDIA: Speakers from various medical groups
High school guidance center
Instructional materials center
American Medical Association publications

EVALUATION: The teacher evaluates the written and oral reports that each student makes on two related fields.

SUBJECT AREA: Science/Guidance

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will be able to describe the courses required to enter the field of electronics.*

STRATEGY:	The teacher and students plan to interview high school industrial arts teachers, regional occupational program (ROP) personnel, high school mathematics teachers, and counselors.
ACTIVITY:	The students research ten careers in electronics and write reports on the entry-level requirements, work conditions, and approximate salary range for each job. The students then plan a high school program leading to each career.
RESOURCES/MEDIA:	Counselors Representatives from the aerospace, television, and communications industries
EVALUATION:	Each student develops a program of courses necessary to attain a career in electronics.

8—89445

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will learn about the roles and responsibilities of people in the radio and television industry.*

STRATEGY: The teacher plans to help students form groups and select a leader. Field trips are planned, and guest speakers are selected.

ACTIVITY: The students participate in a discussion of public media. Other activities include conducting a demographic survey of the community, preparing a newscast, learning about the role of the Federal Communications Commission (FCC) through role-playing, and preparing a program schedule that would fit the needs of a given community. The students can present news broadcasts, public service announcements, and editorials.

RESOURCES/MEDIA: Guest speakers from radio and television stations.

EVALUATION: The students who play the role of judges in the FCC hearing evaluate each group of "applicants" and make a final decision as to which group is granted a license for a station.

SUBJECT AREA: Social Studies/Guidance

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *Each student will list a minimum of five factors that are important in finding job satisfaction.*

STRATEGY: The class is to work in groups on a chart construction activity. Different groups listen to tapes of job interviews and plan how to interview family members and other resource people about the advantages and disadvantages of their jobs. The whole class discusses the factors that are important in finding job satisfaction. The chart may have to be revised several times.

ACTIVITY: In small groups students determine what is important to job fulfillment or satisfaction and construct a chart showing a minimum of five factors. The students listen to taped interviews, interview workers in different occupations about the advantages and disadvantages of their jobs, make surveys about job satisfaction, and so forth.

Returning to their small groups, the students make any necessary changes to their original charts. The entire class discusses each group's chart, including the revisions that were made. The students try to analyze why individual perceptions of job satisfaction may have been changed.

The charts can be displayed in the classroom and incorporated into future career education activities.

RESOURCES/MEDIA: Counseling office
Taped interviews with workers
Resource file of community contacts

EVALUATION: The teacher evaluates each student's inventory of personal requirements for job fulfillment or satisfaction.

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will be able to list five occupations and/or leisure activities related to the musical theatre from a teacher-prepared list of 15 occupations.*

STRATEGY: The teacher will lead a discussion about occupations related to the musical theatre. The class can display pictures related to musical productions and view films about musical shows.

The students can prepare a set of questions to ask speakers (director or assistant director). The teachers can arrange for the class to attend a rehearsal and go backstage for interviews with performers and others connected to the production.

ACTIVITY: The students participate in a discussion of musical theatre. After viewing film students develop discussion questions for guest speakers.

The students attend a rehearsal and interview performers. Each student prepares a written paper on the life-styles and leisure activities of people in theatre productions.

RESOURCES/MEDIA: Films
Brochures

EVALUATION: The teacher evaluates student papers.

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will be able to describe the preparation and life-style of a professional musician.*

STRATEGY: The students will hear guest speakers and engage in group research projects. They will investigate the curricular offerings at local community colleges and universities.

ACTIVITY: The guest speakers discuss job supply and demand, training, average salaries, and their life-styles when they are employed and unemployed.

The students research the economics of each career in the *Occupational Outlook Handbook* in groups of four to five students. Each group makes a presentation to the class.

The students make a list of celebrities who have college degrees or have skills in other occupations.

Each student investigates the high school, community college, and university curricula for courses that provide skills and education needed for times of underemployment, unemployment, and employment. Each student should consider a career that could be entered after the first phases out.

The students write essays describing the life-styles of people in the fields being studied. The essays should describe the life-styles of musicians when they are underemployed, unemployed, or employed.

RESOURCES/MEDIA: Professional musicians
Occupational Outlook Handbook

EVALUATION: The teacher evaluates students' essays. NOTE: Care should be taken not to discourage students from entering any field; however, the purpose of this activity is to give students a realistic picture of glamorous occupations.

SUBJECT AREA: Music/Business Mathematics

CAREER EDUCATION GOAL: Consumer Competency

OBJECTIVE: *The students will engage in one activity involving comparison shopping.*

STRATEGY:	The students will plan individual trips to stores.
ACTIVITY:	The students each select one item related to music, such as a record or guitar, and determine what the cost is for that item in three locations. The students discuss the reasons for varying prices and why one brand may be a better buy than a different brand. They try to determine the best buy on the market.
RESOURCES/MEDIA:	Music store owners
EVALUATION:	The teacher evaluates student participation.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The students will be able to describe the probable life-style of selected artists.*

STRATEGY: The teacher plans to invite one or more artists to the classroom. Artists will have various occupations and life-styles. The students may be able to visit artists' studios. In the classroom the teacher and students discuss life-style patterns and implications.

ACTIVITY: The students write projected profiles of the kinds of life-styles they would like. They also should be able to discuss those occupations that would not appeal to them.

RESOURCES/MEDIA: Artists in the community (potter, painter, printmaker, technical illustrator, weaver, graphic artist, sign painter, interior decorator, or poster artist)

EVALUATION: The teacher evaluates each student's involvement and participation.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The students will express their interests, values, and attitudes through a selected art media.*

STRATEGY:	The teacher plans to have individualized activities plus class discussions about interests, attitudes, and values.
ACTIVITY:	On poster board or paper, the students draw situations or places in which they would like to live. The drawings should be painted and enhanced with ink or felt pen. The lettering and bordering are optional.
RESOURCES/MEDIA:	Poster board or paper, watercolor paints, ink or felt pens, magazines, prints, and posters Charts on drawing and painting techniques
EVALUATION:	The evaluation should be based on the use of imagination and skills in composition, painting, and drawing.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will demonstrate skills in drawing and painting in connection with interior design.*

STRATEGY: The teacher plans to have an interior decorator present color and design as related to interior design.

ACTIVITY: Each student compiles a notebook containing samples of materials and drawings for one or more rooms in a residential or commercial building he or she has designed.

RESOURCES/MEDIA: Speakers
Samples of paint, tile, furniture, drapery and upholstery fabric, carpet, linoleum, and wallpaper
Charts on colors, patterns, and designs

EVALUATION: The grading should be based on the use of color, use of textures and patterns, and arrangement of total design (workmanship and involvement).

SUBJECT AREA: Art/Industrial Arts

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *Each student will demonstrate his or her skills in drawing and painting in connection with architectural design.*

STRATEGY:	The teacher plans to make a presentation on perspective and watercolor techniques. A building designer or architect should be invited to address the class.
ACTIVITY:	The class studies floor plans and discusses with an architect the problems involved in creating a design for a building. Each student designs a building or a house using graph paper for the floor plan and drawing paper for the finished design.
RESOURCES/MEDIA:	Speakers Samples of floor plans Charts on scale and perspective Graph paper and large watercolor paper Overhead projector
EVALUATION:	The grading should be based on accuracy, creativity, use of perspective, and watercolor skills (workmanship and involvement).

SUBJECT AREA: Art/Guidance

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will be able to describe in writing at least one occupation related to their favorite area in arts and crafts.*

STRATEGY: The teacher plans to use packets on occupational awareness and interest surveys. The students should prepare to interview persons working in their favorite area. They should spend one day assisting or observing someone who is working in that area.

ACTIVITY: By the end of the school year, each student chooses his or her favorite art activity and researches the following:

1. Are there some occupations that are related to this medium or area?
2. What preparation is needed for this occupation?
3. What are the realities of the job (demands, salaries, benefits, advantages, and disadvantages)?

RESOURCES/MEDIA: Artists
Counselors
Career center materials

EVALUATION: The written descriptions should be evaluated for their accuracy and thoroughness of research.

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The students will be able to describe recreational activities they would like to pursue in their leisure time.*

STRATEGY:	The students will discuss their interests in recreation and make a list of recreational activities.
ACTIVITY:	After participating in several recreational activities, the students rank the activities that appealed to them most and the activities that appealed to them least. They then describe in one-page essays the activities they likely would pursue as adults.
RESOURCES/MEDIA:	Regular physical education equipment Films Field trips
EVALUATION:	The teacher evaluates the essays, and the students evaluate themselves.

SUBJECT AREA: Physical Education/English

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The students will list those attitudes, values, and personal characteristics that would be beneficial in seeking a career as a professional athlete.*

STRATEGY: The class will listen to guest speakers and research the lives of professional athletes.

ACTIVITY: The students interview professional or college athletes living in their community and ascertain those qualities that lead to success in a sports career.

Each student reads a biography of a sports figure and lists the qualities possessed by that person. The class compares the qualities of the different sports figures and determines which qualities seem common to most athletes.

RESOURCES/MEDIA: Speakers
Library materials

EVALUATION: The teacher evaluates the report each student has written on the biography he or she has read.

SUBJECT AREA: Physical Education/Mathematics

CAREER EDUCATION GOAL: Consumer Competency

OBJECTIVE: *Given a list of sporting equipment, the students will be able to describe the proper use of that equipment*

STRATEGY:	The teacher prepares a list of sporting goods and equipment.
ACTIVITY:	The students analyze the school budget to determine the cost of sporting equipment. They discuss the need for new items. Each student chooses one item and makes a report on the proper use of that item.
RESOURCES/MEDIA:	Community members who engage in boating, fishing, skiing, and the like Catalogs from sporting goods dealers
EVALUATION:	The students are given a pretest and a post-test on the cost of sporting equipment.

Level IV, Grades Nine Through Twelve

This section of the guide contains strategies for grades nine through twelve in the following subject areas:

English
Mathematics
Science
Social Studies
Foreign Language
Music
Art
Business Education
Industrial Education
Home Economics
Agriculture
Physical Education
Driver Education
Guidance
Work Experience Education

Although separate guidance units are included, many of the subject area units are designed to include guidance components.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will acquire the language skills that will enable them to go to a job interview with confidence.*

STRATEGY: The students are to be given an opportunity to observe different interviewing techniques. They will hear people who interview applicants as a part of their job.

ACTIVITY: The students view films and filmstrips on interviewing techniques. They listen to people who are experienced interviewers. The class can visit the personnel office of a local company. Back in class the students conduct interviews using videotape equipment. This technique permits the students to critique themselves.

RESOURCES/MEDIA: Job interviewers from industry
Films and filmstrips
Videotape recorder

EVALUATION: The teacher evaluates the results of an objective-type quiz, student participation in the practice interviews, and student papers on the effectiveness of the interviewing techniques used in class.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *Each student will be able to fill out a job application and write a resumé.*

STRATEGY: The teacher will give the students a pretest to learn what they know about the contents of a good resumé and an accompanying letter of application. The students will be given a sample resumé outline form, a personal fact sheet, and an application for employment.

ACTIVITY: Each student completes the application for employment and the personal fact sheet. When these are completed, the students check them for spelling, punctuation, abbreviations, and capitalization.

Working in groups, the students select a number of jobs listed in the classified sections of the local newspapers and categorize each job into one of the 15 clusters.

The students choose jobs that appeal to them and write business letters requesting applications for employment. (The students should not mail the letters.) The teacher reviews the letters for correct form, sufficient content, and neatness.

The class discusses the usefulness of a resumé and the various forms that it may take. The students refer to their fact sheets to determine whether or not all useful information concerning themselves has been included. Then they write resumés.

RESOURCES/MEDIA:

K. R. Adler. *Pathway to Your Future: The Job Resumé and Letter of Application.* Arlington, Maine: Bellman Publishing Co., 1971.

How to Prepare Yourself for Job Interviews. Sacramento: California State Department of Human Resources Development (booklet).

Job Hunting: Where to Begin, Part 1, Locating Job Opportunities (Sound filmstrip kit). Pleasantville, N.Y.: Guidance Associates.

You and Your First Job! Personnel and Industrial Relations Association, Inc. (booklet).

EVALUATION: Each student should achieve a score of 75 percent or better in the post-test on this unit. In addition, the students' fact sheets, business letters, and resumés are evaluated for correctness and completeness.

9—89445

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will increase their own reading rates and will be able to list at least six occupations for which rapid reading would be an asset.*

STRATEGY: The teacher plans to include in each day's lesson one or more timed readings. Emphasis should be placed on having the students increase the number of words they can read at a single glance. The teacher should demonstrate how to avoid poor reading habits. Representatives from those occupations in which rapid reading is an asset can be invited to address the class.

ACTIVITY: The students compile a list of occupations for which rapid reading is an asset; e.g., legal secretary, newspaper proofreader, lawyer, judge, English teacher, and manuscript reader. From this list each student selects one occupation and describes either orally or in written form the specific ways rapid reading is important in that occupation.

The class should spend at least one week concentrating on increasing reading rates.

RESOURCES/MEDIA: Guest speakers
Rapid reading kits (tachistoscopes and rate meters)

EVALUATION: The students take reading rate tests before and after the reading exercises.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will each select one of Mark Twain's occupations and will research that occupation and its current equivalent.*

STRATEGY: The teacher plans to describe Mark Twain's life and his various occupations by lecture and selected readings.

ACTIVITY: The class is divided into 12 sections; each section selects one of Twain's occupations to explore, including its past and present forms. The group discusses Twain's pursuance of that job, his job training, his family's influence, and the usefulness of the job to him and society.

Each group presents its material to the class in a panel discussion. There will be an emphasis on describing the current occupation, the training needed, the differences today as opposed to 60 years ago, and the value of that occupation to society.

RESOURCES/MEDIA: Social Studies teacher
Library
Career center materials

EVALUATION: The students take a pretest and a post-test on the unit.

SUBJECT AREA: English

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *Each student will be able to describe the various routes to job entry in the field of journalism and will be able to explain why planning for a career is beneficial.*

STRATEGY: The teacher will prepare a list of journalists and a list of occupational clusters.

ACTIVITY: From the list of journalists individual students or small groups select a journalist to research. After researching the selected journalists, the students discuss each journalist with special attention given to that person's entry into journalism, the influence of others, the planning and training needed, and the journalist's effect on society.

The class reviews the occupational clusters and discusses where journalism fits within these clusters. The students can select one of the jobs in journalism and research material pertaining to that job.

Finally, each student writes a brief news story with an appropriate headline.

RESOURCES/MEDIA: Journalist
Advertising agent
Career center materials

EVALUATION: The students are given a pretest and a post-test on occupational requirements in the field of journalism.

SUBJECT AREA: English/Guidance

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *The students will be able to analyze the outside forces that mold personality, values, decision-making processes, and interpersonal relationships.*

STRATEGY: The students are to reflect on terms such as *values* and *goals*. They should discuss their own values and those of their parents and of society. They also can discuss how society's values are changing. The teacher can describe the values of individual characters in selected literary works, motion pictures, or television programs. A bulletin board display of various life-styles can be prepared.

ACTIVITY: The students complete a questionnaire on values and attitudes. They write about or participate in discussions on (1) their values and those of others; (2) how and why they make decisions; and (3) understanding self and others. Each student reports on one of the problems teenagers face. These problems include the generation gap, the use of drugs and alcohol, prejudice, consumer awareness, pollution, citizenship, sex roles, and the like.

RESOURCES/MEDIA: Librarian
Counselor
Articles in magazines and newspapers relating to values, decision making, and understanding of self and others

EVALUATION: The students evaluate their own level of awareness concerning values, decision-making problems, and understanding self and others. They also evaluate their increased awareness of outside factors that influence decision making. The teacher evaluates each student's oral report to the class.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will demonstrate an understanding of the practical application of mathematics techniques to a variety of specific jobs.*

STRATEGY: The instructor plans activities around the theme of application of the mathematics topics. The class will develop an outline of information required to understand the mathematics applied to a specific job.

ACTIVITY: The students prepare worksheets on the practical applications of mathematics. They can discuss the following applications:

Minimax problems in decision theory
Statistics used in research and economics
Calculus in physics
Trigonometry in astronomy and astrophysics
Differential equations in electrical engineering
Uses of the computer in engineering, social sciences, and so forth

The students may gather information in a variety of ways; i.e., through books, selected readings, or interviews with people at work (community college teachers, business and government personnel, family members, and the like).

The students develop an understanding of the practical application of mathematics in relation to specific jobs. The teacher and students generate a list of jobs from which individuals can choose their areas of research.

At least once a month the students should be asked to present and demonstrate mathematics problems that pertain to the application of mathematics skills to a specific occupation.

RESOURCES/MEDIA: Rising, G., and R. Wiesen. *Mathematics in the Secondary School Classroom: Readings.* New York: Thomas Y. Crowell Co., 1972.

SCHAUM'S OUTLINE series (Science and mathematics editions). New York: McGraw-Hill Book Co.

EVALUATION: Each student presents and demonstrates to the class at least one mathematics problem encountered by a worker in a specific occupation.

SUBJECT AREA: Mathematics

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *Each student will be able to complete and file the short income tax form (1040A) with competence and understanding.*

STRATEGY: The teacher plans to discuss the history of taxation in the United States and show films provided by the Internal Revenue Service. The class will be able to view and examine income tax forms (e.g., forms 1040A, W-2, and W-4), applications for a social security card, and appropriate income tax tables. The students can discuss where and how the tax dollar is earned and spent.

ACTIVITY: After individual reading assignments are completed, the students participate in a class discussion with a question-and-answer period. They view films and examine the different income tax forms.

Each student completes an application for a social security card and practices filling out Form 1040A.

RESOURCES/MEDIA: Teacher-prepared transparencies of Form 1040A
Overhead projector
Internal Revenue Service (IRS) booklets (available from the local or regional IRS offices)

EVALUATION: Each student completes Form 1040A. The information on the form should be realistic to each student's situation; i.e., factual information if the student is employed and hypothetical income and withholding tax information if the student is unemployed. The teacher checks each form for accuracy. The employed students can submit their forms for tax refunds.

SUBJECT AREA: Science

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will evaluate their academic background against the requirements of a post-high school health training program.*

STRATEGY: The teacher plans to have the class examine: (1) a model set of transcripts representing programs for all types of students; (2) the entrance requirements for a two-year nursing program or allied health programs; (3) the entrance requirements for a four-year college offering a Registered Nurse program with a bachelor of science degree; and (4) the entrance requirements for a school offering both a dental assistant and a dental hygienist program.

ACTIVITY: On a three-column form each student lists (1) the requirements for a two-year college program; (2) the completed subjects and grades from a model transcript; and (3) the deficiencies (if any). The student evaluates the model transcript relative to the entrance requirements for a four-year nursing program. Other programs such as paramedic, radiologist, and the like can be used depending on student interest.

Each student evaluates a model transcript that fulfills the dental assistant program but leaves definite deficiencies for hygienist training. Individual students assume the role of an admissions officer and compose letters of acceptance or rejection to the applicant.

The class discusses the role of the community college in providing academic courses that help overcome deficiencies. A college counselor can be invited to discuss transferable courses.

The students compile a list of health careers that are related to chemistry.

Each student lists his or her course work in relationship to job requirements.

RESOURCES/MEDIA: *Directory of Health Careers*. Available from Hospital Council of Southern California, 6255 Sunset Blvd., Suite 817, Los Angeles, CA 90028.

EVALUATION: Each student writes a report evaluating his or her own qualifications for two allied health occupations.

SUBJECT AREA: Chemistry

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will apply the gas laws to a physiological system in an experimental situation.*

STRATEGY: The teacher plans to discuss the following: (1) Boyle's law as it is applied to respiration; (2) Charles' law as it is applied to the need to warm inhaled air before it can enter the blood efficiently; and (3) Dalton's law of partial pressure as it is applied to (a) the amount of available oxygen in air; (b) the ratio of exhaled to inhaled oxygen in the average lung; and (c) the physical basis for the effect of air pollution through its partial pressure on the amount of available oxygen.

An inhalation therapist will be invited to address the class, and the class will go on a field trip to the physical therapy department of a clinic or hospital.

ACTIVITY: The students work on topics such as the difference in atmospheric pressure at different altitudes, and the lung capacity variations with age and sex. If a spirometer is available, it can be used for experiments.

RESOURCES/MEDIA: Morrison, T. F., and Others. *Human Physiology.* New York: Holt, Rinehart & Winston, Inc., 1972.

O'Connor, R. F. *Chemical Principles and Their Biological Implications.* New York: John Wiley & Sons, Inc., 1974.

EVALUATION: The students take a test on the material covered in the unit.

SUBJECT AREA: Physical Science (Geology)

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will explore and compare various geological careers (meteorology, oceanography, and the like).*

STRATEGY: The teacher plans a text unit to include a discussion of opportunities in associated geological careers such as meteorologist, soil conservationist, and the like. A professor of geology or a petroleum geologist from an oil company can be invited to talk to the class.

ACTIVITY: The students visit local oil companies to determine the opportunities that are available in the petroleum industry. They research the educational requirements in geology. The class compiles a list of geology-related careers in governmental agencies and in the petroleum industry.

RESOURCES/MEDIA: Resource information from the following:

American Association of Petroleum Geologists
144 So. Boulder Avenue
Tulsa, OK 74103

Geological Society of America
213 E. 46th Street
New York, NY 10017

EVALUATION: The students are given a test on the unit.

SUBJECT AREA: Science/Guidance

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will become aware of occupations within the medical field and will be able to identify the aptitudes and abilities required in each occupation and to assess their own capabilities for each occupation.*

STRATEGY: The teacher plans to introduce the unit and discuss various medical occupations. The students will review the resources that are available. The teacher will assist in the development of a planned exploration of each occupation. The class will develop a questionnaire to use when interviewing people at work.

ACTIVITY: The students form teams of two or three individuals who have a common interest in a field of medicine. These teams visit the career centers and talk to counselors. The teacher helps to arrange visitations with people in the field.

RESOURCES/MEDIA: Field trips
Career center
College catalogs

EVALUATION: The students independently prepare for each of five occupations selected within a medical field. They learn what training is needed for the entry-level position in each occupation. Each student develops a four-year plan to prepare for entry into the general field.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Attitude Development

OBJECTIVE: *Each student will list and discuss five factors that would help make a job a fulfilling part of his or her life.*

STRATEGY: The teacher leads the class discussion in this unit. The strategy is to assist students in developing appropriate attitudes toward the contributions of people in various work roles.

ACTIVITY: The students, in groups of five or six, discuss what would make a job meaningful and construct a chart containing between five and ten factors important to a good job. These are shared with the entire class. The students listen to four or five taped interviews with people discussing the good and bad points of specific jobs. In their original groups they revise, if necessary, their charts. The entire class then meets to discuss the revised charts.

RESOURCES/MEDIA: Work experience coordinator
Tape recorder

EVALUATION: The students list those things they believe would make a job satisfying. They should defend and/or explain the motives behind their choices.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will demonstrate the techniques of oral persuasion as they contribute to occupational success.*

STRATEGY: The teacher plans to have discussions about the separate functions of labor and management and the roles of key members of these groups during periods of disagreement.

The class is divided into groups representing labor and management. The students simulate a strike threat situation, select representatives to meet in negotiations (public panel) with the other side, and engage in discussion until an agreement is reached.

ACTIVITY: The students choose between the two negotiating teams. They decide on the name for the company and for a product with which they can become identified.

The class discusses the separate viewpoints of workers and management in the negotiations and the functions of key personnel such as the owner, vice-president, supervisor, union leader, and union shop steward. The class develops six to eight worker demands pertaining to salary increases, additional paid holidays, increased job security, shortened work week, a day care center for employee children, profit-sharing plan, year-end bonus plan, and so forth.

The union group establishes priorities for its demands and selects three representatives to speak for the group. The management group selects those demands with which it can agree, those with which it cannot agree, and those with which it might be willing to compromise. Three representatives are selected to negotiate for the management group.

RESOURCES/MEDIA: Resource person to act as arbitrator (high school student, teacher, counselor, family member, community resource person, or labor relations attorney)

EVALUATION: The teacher evaluates student participation in the class discussion on the effectiveness and ineffectiveness of approaches, methods, and skills of the negotiators for labor and management.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *Each student will become aware of the significance of credit buying in our economy.*

STRATEGY: The teacher plans to present a history of credit purchasing. Preparations are made for small group field trips to different lending agencies. The students are to discuss the arguments for and against credit buying. Each student plans to develop a paper on his or her view of an economic system without credit.

ACTIVITY: The students read about credit purchasing.

Small groups of seven to ten students visit a bank, savings and loan association, credit union, or finance company. Each group shares the information gathered about the types of credit service offered by each of these businesses.

The class discusses the arguments for and against credit purchasing.

The students view films such as *Banks and Credit, Consumer Education: Installment Buying,* and *Consumer Education: Retail and Credit Buying.*

The students present individual reports on their views of an economic system without credit.

RESOURCES/MEDIA: Textbooks
Films
Community resource facilities
Credit information from lending agencies

EVALUATION: The teacher evaluates individual reports on the significance of credit buying in our economy. Each student prepares a list of occupations in financial institutions.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *Each student will select three figures in American history and describe their work histories and how they made career choices.*

STRATEGY: The teacher plans to have the class discuss why people make career changes several times during their lives. The students will tell about family members or friends who have changed careers.

Films on the life of Robert E. Lee can be shown to the class. The students will learn about his careers as a planter, general, and educator. The different careers of U.S. presidents can be discussed.

The class also can discuss current trends in occupational change and the need for adaptability.

ACTIVITY: The students view films on Robert E. Lee and discuss the occupational changes he made during his lifetime. They also read about other famous Americans who made occupational changes.

The class discusses current trends in occupational change as well as its causes and its impact on the individual. The need for people to be adaptable should be brought into the discussion.

Each student selects three historical figures and describes in oral or written reports the occupational histories of each. The student should explain what effect occupational change had on these individuals.

The students design their own career plans, beginning with a tentative career choice and showing several changes that might evolve and how they would adapt to them. The career plans can be displayed.

RESOURCES/MEDIA: Biographical material on people in U.S. history. (Films such as *Robert E. Lee, A Background Study* and *Lee, The Virginian* can be viewed by students.)

EVALUATION: The teacher evaluates the oral or written reports and the individual career plans submitted by the students.

SUBJECT AREA: Social Studies

CAREER EDUCATION GOAL: Economic Awareness

OBJECTIVE: *The students will be able to conceptualize and verbalize an understanding of employer expectations of an employee in a specific field and to describe responsibilities as they are related to employee goals.*

STRATEGY: The teacher plans to initiate group discussions and to invite local employers to make presentations to the class.

ACTIVITY: The students meet in a group and exchange general perspectives about employee responsibilities to an employer (e.g., being on time and communicating with supervisors and fellow employees).

Each student is given a specific employment title (fireman, chemist, and the like) and is asked to discuss the following:

1. Four responsibilities to an employer and the reasons why the employer would be concerned about these areas.
2. The education level or skills required to perform the job and how an individual normally would achieve these necessary skills.

An employer is invited to discuss specific areas selected by students. The students have an opportunity to ask questions. In group discussions the students match initial perspectives with those verbalized by the employer.

The class visits a work site and observes actual tasks being performed.

RESOURCES/MEDIA: Local businesses
Film or slide presentations
Printed materials

EVALUATION: The teacher evaluates essays on the subject of employee responsibilities.

SUBJECT AREA: Foreign Language

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will list four ways that demonstrate how knowing a foreign language would be useful in an emergency situation while visiting a foreign country.*

STRATEGY: The teacher plans to invite bilingual persons who provide emergency services; e.g., a fire equipment dispatcher or a police officer. A travel bureau representative or a professional translator also could be asked to talk to the class.

ACTIVITY: The students ask guest speakers specific questions about foreign language and occupations in the language being studied. They can plan a trip to a foreign country where the language being studied is used.

RESOURCES/MEDIA: Text
Career center materials
Travel agencies

EVALUATION: The teacher evaluates the ability of each student to request assistance in the language being studied.

SUBJECT AREA: Foreign Language/Business Law

CAREER EDUCATION GOAL: Consumer Competency

OBJECTIVE: *Each student will be able to translate into English a business document written in a foreign language with 80 percent accuracy.*

STRATEGY:	The teacher prepares foreign language documents used in business transactions; e.g., real estate or inheritance papers, purchase agreements, and newspaper advertisements.
ACTIVITY:	The students translate the documents. The students then can practice their vocabularies in role-playing situations; e.g., renting a house or making a purchase.
RESOURCES/MEDIA:	Guest speaker (a lawyer who has clients who speak the foreign language being studied or a real estate agent who is bilingual) California Rural Legal Assistance, Inc.
EVALUATION:	The teacher observes the role-playing activity and evaluates the translated documents.

SUBJECT AREA: Foreign Language/Guidance

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will list their reasons for enrollment in a foreign language course, will interview five people who are bilingual and use both languages in their work, and will present a report on the value of a foreign language in occupational fields.*

STRATEGY: The teacher plans to ask students to list their reasons for being enrolled in the foreign language course.

Community resource people who use more than one language in their work can be interviewed by the class. The students can ask about the language proficiency required on the job.

The students can present reports on the value of a foreign language in specific occupational areas.

ACTIVITY: The students list their reasons for being enrolled in the foreign language course.

The teacher and students interview community resource people who are bilingual and use languages in their work. Before meeting with the resource people, the class develops a list of questions that will be presented to the guest speakers. The list might include the following:

1. What languages do you speak, read, and write?
2. When did you become interested in the study of languages?
3. How do you use these languages in your work?
4. Why should foreign languages be a part of the school curriculum?

The students present written or oral reports on the value of foreign languages in occupations.

RESOURCES/MEDIA: Community resource speakers
Videotaped interviews
Tape-recorded interviews
Films
Career center information

EVALUATION: The teacher evaluates the presentation of the reports.

SUBJECT AREA: Music

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will be able to describe the duties of people involved in a radio, television, or stage presentation.*

STRATEGY: The teacher plans a unit on the tasks involved in musical presentations. The students can choose to participate in a musical production for radio, television, or stage. Community resource people from these areas can be asked to provide technical assistance in planning and producing the projects.

ACTIVITY: The students interview persons involved in a presentation and follow the development of the presentation from its initial stages to completion. The students learn about job requirements and the attitudes that are needed for success in this field. The students then develop their own presentation.

RESOURCES/MEDIA: Performers and technicians from radio, television, or theatrical organizations

EVALUATION: The teacher observes student participation in the activities and evaluates papers describing the duties of people in musical productions.

SUBJECT AREA: Music/Drama

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will develop individual or team poetry/prose projects with a musical background accompaniment for presentation to the class.*

STRATEGY: The teacher plans to introduce various periods and styles of music and show how they can be used.

The students are assigned activities to increase personal awareness of musical accompaniment, including analysis of the effect of the music on the program content; i.e., radio, television, theatrical productions, and the like.

Community resource people involved in musical and theatrical productions can visit the classroom to present individual approaches to their work, their processes of integrating music and verbal expression, intended audience impact, and so forth.

ACTIVITY: The students develop a list of types and styles of music for different historical periods of development. The class discussion and research can revolve around how the music was presented and for what purpose it was intended within each historical period. Recordings, tapes, and live presentations of examples should be used whenever possible.

The class can attend various presentations in which music and verbal expression are combined. The students should observe the variety of ways that music and words can be combined, and they should analyze the impact of this combination on the audience.

Community resource people are invited to the class to perform and discuss their work. They can be asked to tell the class how they integrate words and music and what they intend in terms of audience impact.

The students choose something that they have written and integrate the words with music. The music does not have to be original; it may be background or accompaniment to the words. In presenting their projects, the students may want to use slides and tapes. A nonverbal pictorial message combined with taped musical lyrics would be an effective communications technique.

RESOURCES/MEDIA: Community and school resource people
Records, tapes, and videotapes

EVALUATION: The teacher evaluates the completion and presentation of the projects.

SUBJECT AREA: Art

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will perform tasks required in an assembly-line art project.*

STRATEGY:	The teacher plans to have the students interview an art director of an advertising firm. The director should be asked to discuss job titles and duties involved in completing an advertising project. The class also can visit a print shop to observe how finished artwork is produced.
ACTIVITY:	Each student writes a report on one function or step of production in the development of an art project. The entire class then works together on an assembly-line art project. The students make a list of the terms that are unique to the art of printing.
RESOURCES/MEDIA:	Guest speakers Samples of printed advertising
EVALUATION:	The teacher evaluates each student's participation in the class project and how well he or she has learned the steps in producing printed artwork.

SUBJECT AREA: Crafts

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will demonstrate an awareness of the importance of a mathematics and science background in the jewelry profession, the training needed, and the steps necessary for starting their own business.*

STRATEGY: The teacher plans to invite a local jeweler to describe the training necessary for the jewelry profession.

The class can visit a plating firm for a demonstration of electroplating and its application to jewelry. Various films on metallurgy, melting points, fluxes, and oxidation can be viewed. A mathematics teacher can present a lesson on the conversion between the English system and the metric system and the conversion of pennyweight to karats and grams to ounces.

A gemologist can be asked to speak on the geometry involved in cutting gem stones, the cleavage lines in crystals, and the optical refraction of light.

A business and loan adviser from a bank can be asked to outline the requirements for obtaining capital or to present guidelines for establishing prices, profit margins, purchasing practices, and recordkeeping.

ACTIVITY: Each student prepares a proposal for starting his or her own business and writes a short paper on the training needed for the jewelry profession.

The students compile a list of jewelry terms, machines, and tools.

Teams of students produce short films and slide sets showing some aspect of the training involved in the jewelry business.

RESOURCES/MEDIA: Audiovisual center at school or district level
Jewelry stores in the community

EVALUATION: The teacher evaluates the written reports and the slide or film projects developed by the students.

SUBJECT AREA: Commercial Art

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each student will illustrate his or her awareness of the influence of environment on design and design occupations.*

STRATEGY:	The teacher plans an interview with city planning personnel. The class will discuss the importance of design and the jobs it creates. The class can tour one area of the community to study how design or commercial art has affected the environment.
ACTIVITY:	The students list the occupations that would be involved in designing a civic center or mall. They interview designers and commercial artists in the community. Each student designs a civic center or mall that is environmentally sound. Each student designs a sign that will match and enhance the surrounding area.
RESOURCES/MEDIA:	City planning department personnel Career center
EVALUATION:	The teacher evaluates model designs presented by the students.

SUBJECT AREA: Commercial Art/Guidance

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will be able to identify the education, training, and specific skills needed for a career in commercial art.*

STRATEGY: The teacher prepares the class for interviews with counselors at various art schools to discuss curriculum and opportunities. The students can visit personnel offices and employment agencies to learn about the educational requirements of various jobs in commercial art. They also can talk to one or more commercial artists to find out what training is required.

ACTIVITY: The students list several art schools and the various jobs for which they offer preparation. After visiting these schools the class discusses and evaluates the different curriculums being offered. Each student prepares an art portfolio for the art school of his or her choice.

RESOURCES/MEDIA: Counselors
Commercial artists
College brochures

EVALUATION: The student portfolios are evaluated for content and artistic presentation. The teacher observes each student as he or she assumes the role of an applicant being interviewed by an art school screening committee.

SUBJECT AREA: Business Education

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will be able to list four locations where one can receive advanced training in the clerical field.*

STRATEGY: The teacher plans to lead class discussion and to arrange for students to visit career centers and business colleges.

ACTIVITY: The students discuss the need for advanced training and gather information about colleges where such training may be obtained. They interview personnel in various businesses about opportunities in the clerical field and the type of office skills required. Each student compiles a list of places where advanced training is available.

RESOURCES/MEDIA: "Can I Be an Office Worker." Pamphlet made available by General Motors Corp.
Noyes, N. B. *Your Future As a Secretary.* New York: Richards Rosen Press, Inc., 1971.
"So You Want to Be a Stenographer." Pamphlet made available by Educational Affairs Department, Ford Motor Co.
Whitcomb, Helen and John. *Strictly for Secretaries.* Whittlesey House, 1957.

EVALUATION: The teacher evaluates student awareness of training and opportunities in the field.

SUBJECT AREA: Business Education/English

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *The students will develop, in written form, the relationship of English to office occupations.*

STRATEGY: The teacher plans to have students visit an employment agency to become familiar with skill tests in typing and shorthand. A stenographer or other clerical person can be invited to speak to the class.

ACTIVITY: The students report on job opportunities that are listed in the classified section of the newspaper. Each student plans a high school program that will lead to a career in business and office occupations. The class compiles a list of the business career choices open to the student who has mastered stenography.

Each student develops a written paper on the need for English skills in office occupations.

RESOURCES/MEDIA: Guest speaker
Career center
Employment agencies

EVALUATION: The teacher observes each student's participation in the discussion with guest speaker and evaluates papers.

SUBJECT AREA: Typing

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The students will be able to present a typewritten report on five main points to be considered when applying for a job.*

STRATEGY: The teacher plans to lead a class discussion on occupational interests, employment opportunities within the community, and primary considerations when being employed.

ACTIVITY: Each student types a personal inventory sheet and a letter of application. The "Permit to Work" and "Affidavit of Age of Minor" forms also should be typed. Each student makes a list of his or her main selling points that should be brought out in a job interview. Each student also develops a paper on job application procedures.

RESOURCES/MEDIA: Films
Employment application forms

EVALUATION: The teacher evaluates each student's typewritten application project.

SUBJECT AREA: Industrial Education

CAREER EDUCATION GOAL: Career Preparation

OBJECTIVE: *The students will be able to synthesize the steps involved in creating a mass-produced product and will be able to explain the opportunities and economics of a woodworking enterprise.*

STRATEGY: The instructor plans to discuss the subject of mass production and the steps required to set up a mass production run (planning, designing, drafting, cost analyzing, making flowcharts, operating machines, finishing, selling, and distributing).

The students are to be divided into the following work sections: (1) planning, designing, and drafting; (2) cost analysis and production flow; (3) prototype and fixtures; (4) personnel; and (5) quality control.

ACTIVITY: The class is to make holders for cassette tapes. The students organize themselves into five sections.

Section 1 designs the product.

Section 2 determines the cost and, if the cost is excessive, tries to reduce the cost. This section makes a flowchart of the product as it is machined and assembled.

Section 3 makes a prototype and designs and makes the fixtures for the mass production run.

Section 4 is responsible for assigning jobs and for making sure that each student knows what his or her job is.

Section 5 is responsible for making templates and fixtures and for checking each machined part.

Timecards are maintained by each student to account for the wages that would be paid and to determine the actual cost of the product minus tool and equipment amortization. The students determine the percentage of markup on similar products in retail stores.

RESOURCES/MEDIA: Personnel from industry

EVALUATION: The teacher evaluates each student's participation in the project. The students can evaluate the quality of the finished product.

SUBJECT AREA: Industrial Education

CAREER EDUCATION GOAL: Career Exploration

OBJECTIVE: *The students will be able to read blueprints for framing a house, understand key terms in house planning, develop a list of materials needed for framing a house, and construct a scale model of a house from a scale blueprint.*

STRATEGY: The teacher plans to have a carpenter visit the classroom. The teacher and the carpenter engage the students in a discussion of occupations in the building trades. The class then can visit a construction site.

A local building inspector can be invited to explain and discuss what an inspector looks for when inspecting a new residential dwelling for approval of the construction.

ACTIVITY: The students discuss with the teacher how to read blueprints. They take notes on key terminology.

The students prepare a list of materials needed for the construction of a scale model house and purchase the required materials. They measure, cut, and assemble the model according to blueprint specifications.

A carpenter representative visits the class to talk about occupations in the building trades, and the students visit a construction site.

A building inspector visits the class to discuss the scale model and the requirements for construction approval.

RESOURCES/MEDIA: Carpenter
Building inspector
Blueprints for house construction
Printed materials explaining blueprint reading and terminology

EVALUATION: The model house should meet the requirements of the local building code when it is inspected by the building inspector.

SUBJECT AREA: Industrial Education/Graphic Arts

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will be able to list and describe the occupations related to yearbook production.*

STRATEGY: The class is to be divided, in accordance with each student's interest, into the following groups: (1) layout design; (2) copy writing and editing; (3) photography; and (4) art.

Plans are made for a field trip to a publishing plant to observe the printing process.

ACTIVITY: The class lists occupations related to producing a yearbook. The students do research work in their interest group; i.e., they describe the job, education and training level, benefits, and drawbacks. They prepare a written report on occupations in the graphic arts field.

RESOURCES/MEDIA: Librarian
Commercial artist
Photographer
Career center

EVALUATION: The teacher evaluates the written reports.

SUBJECT AREA: Home Economics

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each student will be able to list ten occupations in the field of home economics and describe qualities and skills desirable for each.*

STRATEGY:	The teacher plans this unit around the subject area currently being covered in the classroom; the subject might be cooking, sewing, fabrics, consumer economics, nutrition, child care, and the like.
ACTIVITY:	The students form groups to develop an outline for a particular project, do library research, and review films on selected occupations.
RESOURCES/MEDIA:	Guest speakers On-the-job interviews Field trips
EVALUATION:	The students list ten occupations and describe qualities and skills desirable for each. They follow up with general exploratory placements.

SUBJECT AREA: Agriculture

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *Each student will be able to describe in oral or written form at least one test conducted by a local agricultural laboratory and the agricultural use of the information provided by the test.*

STRATEGY: The teacher plans a field trip to a farm or an agricultural laboratory. A commercial grower or laboratory technician should be asked to limit his or her presentation and discussion to only a few areas, with particular attention to plant chemistry, nutrient needs, and control techniques. A detailed discussion with the students may be more important than an overview that provides little of the information really needed.

The students may ask questions about career factors (wages, challenges, opportunities, and qualifications), but the level of questions should be directed toward specifics. Individual students can research other interests on their own time.

ACTIVITY: The class visits a commercial farm or an agricultural laboratory. The students learn about the fertilizer program and the use of analytic data from plants, with reference to major plant nutrients (nitrogen, phosphorus, potassium, magnesium, copper, and so forth). A leaf analysis can show the parts-per-million data about the presence of nutrients. Scientific experiments have provided optimum levels for these elemental nutrients for successful cultivation. Analytic data determine the quantities or concentrations of fertilizers to be used.

The students visit an agricultural laboratory. They talk with technicians about the analysis of plant parts. They discuss laboratory equipment, measurement techniques, recording of data, reporting of data at agricultural meetings, recommendations to growers, mathematics used, wages, and costs.

In the classroom the students discuss career opportunities, use of agricultural laboratories by growers, job descriptions, job satisfactions, future opportunities, and so forth.

RESOURCES/MEDIA: Commercial grower
Agricultural laboratory and staff
Pamphlets and other materials from the California Agricultural Extension Service
Films and filmstrips

EVALUATION: The student should be able to describe orally or in writing the importance of the agricultural laboratory in commercial agriculture. In particular, he or she should be able to describe the feedback loop or exchange of data (grower to laboratory and back to grower) by which the grower maintains the optimum growing conditions for a particular commodity with reference to plant nutrients.

SUBJECT AREA: Agriculture/Guidance

CAREER EDUCATION GOAL: Career Orientation

OBJECTIVE: *The students will become more aware of the relationship between the agriculture curriculum and employment opportunities, more knowledgeable of the career choices available, and more able to assess their own skills for this field.*

STRATEGY: The teacher plans to show films or filmstrips on careers in agriculture and to lead a class discussion on that topic and related areas. Each student will interview three people who are working in a career area of interest. The students will take turns leading the class in discussion of the various interviews.

ACTIVITY: The students discuss occupations in agriculture; e.g., ranch hand, equipment operator, milker, sheepherder, feed store worker, and the like.

Each student conducts three interviews with workers in a chosen area; i.e., preferably one employer and two workers at entry-level jobs.

The students discuss their interviews with the rest of the class. Much creativity can be expressed by students as they make their presentations. They might use poster board diagrams with pictures, slides and tapes, videotapes, cassette tape recordings, and the like.

RESOURCES/MEDIA: Films and filmstrips
Career center materials

EVALUATION: The teacher evaluates participation of students in the class discussions and individual oral presentations.

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Career Exploration

OBJECTIVE: *Each student will be able to direct a group of younger students in a physical education activity.*

STRATEGY:	The teacher makes arrangements for students to officiate or direct recreational activities at an elementary school. The students first will form groups to discuss the rules for different games and sports.
ACTIVITY:	Each student directs or officiates a physical education activity. This could be at an elementary school or at a recreational area.
RESOURCES/MEDIA:	Recreational directors Physical education teachers Films and filmstrips
EVALUATION:	Elementary school personnel help to evaluate student effectiveness.

SUBJECT AREA: Physical Education

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *The students will be able to list 25 occupations that are related to physical education and recreation.*

STRATEGY: The teacher plans to divide students into groups to research the following occupational areas: (1) lodging; (2) recreation; (3) entertainment; (4) cultural services; (5) sports; (6) food and beverage services; and (7) travel services and promotion. Persons employed in one or more of these areas will be invited to address the class.

ACTIVITY: Each study group presents its findings by means of a panel discussion.

The students list 25 occupations and describe the education and training required for each.

RESOURCES/MEDIA: Guest speakers (travel agent, sightseeing guide, booking agent, car rental agent, caterer, flight kitchen manager, convention director, umpire, curator, historical site director, concert promoter, amusement park manager, park superintendent, and so forth)
Occupational Outlook Handbook

EVALUATION: The teacher evaluates each student's presentation and his or her participation in the study groups.

SUBJECT AREA: Physical Education/Guidance

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *The students will be able to describe those high school courses that prepare students for college degrees in physical education.*

STRATEGY:	The teacher plans a unit around the interests of students. The students will learn about employment possibilities in school athletic programs, city recreational programs, and health clubs.
ACTIVITY:	The students list those courses needed to prepare for a college degree in physical education. Each student develops an individual plan of education and training required.
RESOURCES/MEDIA:	Counseling staff College students majoring in physical education College handbooks
EVALUATION:	The teacher evaluates each student's presentation and individual plans.

SUBJECT AREA: Driver Education

CAREER EDUCATION GOAL: Career Awareness

OBJECTIVE: *Each student will be able to pass the written form of the state driving test and identify ten occupations that require driving skills.*

STRATEGY:	The teacher plans to have groups of students discuss the Vehicle Code. A representative of the Department of Motor Vehicles will be asked to talk to the class, and the students will take sample tests.
ACTIVITY:	The students discuss the skills needed to pass a driving test. They act out situations involving the legal and moral responsibilities of driving. Each student lists occupations that require driving ability.
RESOURCES/MEDIA	Department of Motor Vehicles personnel Driving tests Films and filmstrips
EVALUATION:	The students complete the written form of the state driving test. They list occupations that require driving skills.

SUBJECT AREA: Guidance

CAREER EDUCATION GOAL: Educational Awareness

OBJECTIVE: *Each student will be able to list five occupations related to each of the academic areas of English, social studies, mathematics, and science from a list of occupations after a minimum of five group guidance sessions.*

STRATEGY: The counselor will lead a discussion on the subject of relating the academic disciplines to life occupations. Pertinent films and filmstrips will be shown relating high school preparation in each field to job requirements.

The class will use printed materials from national and local councils of teachers of English, social studies, mathematics, and science. The students will prepare questions for speakers, letters of inquiry, and the like.

ACTIVITY: The students discuss how the four academic disciplines are relevant to specific occupations. Films and filmstrips are viewed, and persons in different occupations talk to the class.

RESOURCES/MEDIA: Speakers
Films and filmstrips

EVALUATION: The students evaluate the unit by answering a questionnaire concerning the decisions they have made relative to their high school program, the personal career decisions they have made, and the suggestions they have for improving the unit. The counselor evaluates the impact of the unit on student attitudes and decisions.

SUBJECT AREA: Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The students will be able to demonstrate a knowledge of the clustering system and to evaluate their own personal goals and potential.*

STRATEGY: The counselor plans to distribute lists of occupational clusters and to discuss the kinds of occupations listed under each career classification.

ACTIVITY: Each student develops an outline of his or her interests, likes, and dislikes. The students and the counselor discuss the relationship between personal likes and dislikes and the occupational clusters.

The students act out situations in *Search for Values Kit,* Unit 1, "Time."

Lesson 1–"Getting from Here to There" (Students show how they organize the steps necessary to reach personal goals.)

Lesson 2–"Who's Got Time" (Students show how they organize their time to complete personal tasks.)

Lesson 3–"If It Please the Court" (Students play roles of people holding jobs in specific occupations. Students in "jobs" act as judges, and other students petition the "court" to permit them to enter certain occupations. The "petitioners" must show cause why and how they have prepared themselves for the particular occupation.)

RESOURCES/MEDIA: *Search for Values Kit* (10150), *DIMENSIONS OF PERSONALITY* series. Published by CEBCO/PFLAUM Division of Standard Publishing, c/o Standex West, 2300 Merced Avenue, South El Monte, CA 91733

Career center materials

EVALUATION: The counselor evaluates student participation and administers tests that measure interests or aptitudes

SUBJECT AREA: Guidance

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *The students will be given the opportunity to become aware of their interests, aptitudes, and values in relation to career decision making.*

STRATEGY:	The counselor plans to discuss the use of aptitude tests, have the students take the tests, and provide each student with the results in order to guide them toward suitable careers.
ACTIVITY:	Each student completes an occupational preference survey and selects three career areas of interest. The students are given aptitude tests and value inventories. They discuss the relationship of values to career choice.
RESOURCES/MEDIA:	Aptitude tests
EVALUATION:	Have the students name three career possibilities appropriate for themselves and show how their highest interests, aptitudes, and values relate to those occupations.

12—89445

SUBJECT AREA: Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The students will be able to select three jobs for which they have interest and some of the necessary abilities.*

STRATEGY: The counselor plans to invite speakers from a career center, a local college, or the school's counseling office. The students will complete interest inventories and see their permanent school records. Discussion groups can be formed.

ACTIVITY: The students hear speakers and view films on the subject of careers. They complete interest inventories and take ability tests. They research careers of interest in the library and try out sample work experience kits. In class the students discuss what they have learned about career opportunities.

RESOURCES/MEDIA: Guest speakers
Media center or library
Interest inventories

EVALUATION: The teacher interviews each student, and the students complete the interest inventories and ability tests. The students' sample work experience kits are evaluated.

SUBJECT AREA: Guidance

CAREER EDUCATION GOAL: Self-Awareness

OBJECTIVE: *The students will take an interest inventory and do a follow-up paper on one career of interest in the category in which they scored highest.*

STRATEGY:	The counselor or career center coordinator will explain the purpose of the *Kuder Interest Inventory*. The students will view filmstrips about careers of interest.
ACTIVITY:	The students take and score their own interest tests. They view filmstrips on their highest interest areas. Each student chooses one occupation in his or her highest interest area and uses career content materials to do a follow-up paper on this occupation.
RESOURCES/MEDIA:	Interest surveys
EVALUATION:	The follow-up papers are evaluated by the coordinator in terms of the relationship between test scores and student interests.

SUBJECT AREA: Guidance

CAREER EDUCATION GOAL: Career Planning and Decision Making

OBJECTIVE: *The students will determine the most economical way to reach their career goals.*

STRATEGY: The counselor will discuss sliding scales for financial aid and scholarships that are available for certain careers.

ACTIVITY: The students state their tentative career choices. Each student investigates the costs of training for a career in an adult education program, a community college, a four-year institution, or a vocational school.

Individual students may look into the costs of (1) attending a four-year college while living at home; (2) attending a four-year institution in another part of California; and (3) attending an institution in another state. Others may wish to investigate the cost of attending college part-time while working (using projected income).

The students determine their qualifications for scholarship and financial aid. Each student writes a one-page essay describing the most economical way to reach his or her career goal.

RESOURCES/MEDIA: Work-study program personnel
Financial aid consultants from local colleges
Brochures from California State Scholarship and Loan Commission

EVALUATION: The teacher evaluates students' papers on career goals.

SUBJECT AREA: Work Experience

CAREER EDUCATION GOAL: Career Exploration

OBJECTIVE: *Each student will explore five occupational interests while keeping in mind his or her personal attributes, interests, and abilities in order to find personal occupational satisfaction.*

STRATEGY: The coordinator plans a field trip to a career center where the students will select occupations of interest. The students will learn about occupations and obtain names of potential employers. The class will investigate work experience programs and identify the advantages and disadvantages of selected occupations.

ACTIVITY: The students select information about possible occupations. They view films and talk to workers employed in these occupational areas.

Each student participates in exploratory work experience in a selected occupational area.

RESOURCES/MEDIA: Speakers
Films
Printed materials

EVALUATION: Each student evaluates the occupational information he or she has collected, prepares a written and oral report listing the advantages and disadvantages of a selected occupation, and lists five related occupations within this occupational choice.

SUBJECT AREA: Work Experience

CAREER EDUCATION GOAL: Career Exploration

OBJECTIVE: *Each student will observe three different occupations of his or her choice for a period not to exceed 30 hours each.*

STRATEGY:	Through exploratory work experience, the student will be placed in a nonpaid position at a business or industrial establishment for a period of time not to exceed 30 hours, at 2 hours per day for each assignment. The student will be required to prepare an occupational brief for each occupation observed.
ACTIVITY:	The students identify three occupational clusters as possible choices in their career interest. Each student is placed on a job site to observe what the job is all about.
RESOURCES/MEDIA:	Businesses Industries Public agencies Interest tests
EVALUATION:	Each student should be able to identify and describe three required skills for each job he or she observes.

SUBJECT AREA: Work Experience

CAREER EDUCATION GOAL: Career Preparation

OBJECTIVE: *The students will be able to orally report on specific requirements, working conditions, advantages and disadvantages, and individual preferences for selected occupations.*

STRATEGY: The coordinator orients and trains the staff, students, and work station employers. Supervisors are selected, and work stations are identified. The coordinator also explains the program to the parents.

ACTIVITY: Qualifying students work in the different job stations. They work from 4 to 6 hours each day. They do not attend school during this period, but they have scheduled conferences with their school supervisor. They receive elective unit credit in the same ratio of time to credit as their other classes.

RESOURCES/MEDIA: Program guide (complete description of program, roles, and job stations)

EVALUATION: Before graduation students are interviewed to determine their position in personal goal setting. The coordinator interviews students after graduation to see if experience and placement were correlated. Their achievements are compared with those of former graduates.

SUBJECT AREA: Work Experience/Guidance

CAREER EDUCATION GOAL: Career Exploration

OBJECTIVE: *Each student will be able to list at least three occupations of interest.*

STRATEGY: A counselor or career coordinator plans to administer interest tests, and the students will evaluate the results of the tests and discover at least three occupational areas of interest. The students will try out their skills in work experience stations.

ACTIVITY: The work experience coordinator or career counselor describes the interest test to students, and the students complete the test and discover at least three occupational areas of interest to explore. The students become involved in exploratory work experience programs based on these interests.

RESOURCES/MEDIA: Career counselor
Career guidance materials
Occupational Outlook Handbook

EVALUATION: The students learn their occupational interest areas and take notes on basic occupational information. The counselor or teacher evaluates each student at the work experience stations.

Resource Materials

The following list of resource materials was taken in part from *Sources of Information on Career Education, An Annotated Bibliography.** The list includes teacher and student resources relating to career education and occupational preparation. Further information about resource materials can be obtained from the State Curriculum Materials Depository, housed at California State University at Sacramento; from the California State Department of Education in Sacramento; and from offices of county superintendents of schools.

A-8 English Educational Decisions Unit. Los Angeles: Los Angeles Unified School District,1968.
This 45-page publication was designed to help the pupil to understand educational opportunities; to learn why educational planning is emphasized in the first semester of grade eight; to think about career planning; and to base choices on a realistic appraisal of his achievements, aptitudes, and broad vocational interest.

Aides to Career Education (ACE) program. Los Angeles Unified School District, Spring, 1973.
This booklet includes a description of the Aides to Career Education (ACE) Program as utilized in the Los Angeles Unified School District. It includes information on the use of classroom aides in the program; legal responsibilities of the school system; information on program accountability and evaluation; and supplemental information such as descriptions and suggested audiovisual techniques.

Introduction to Teaching Apprentices. Sacramento: California State Department of Education, 1975.
This book is designed for use by instructors of apprenticeship courses. Many kinds of crafts, trades, and technical occupations are discussed, as well as the presentation of courses and methods of instruction.

Basic Employment Information: A Handbook for Students in Occupational Classes. Los Angeles: Los Angeles Unified School District, 1967.
This 102-page book is intended for use by senior high school students. It contains basic job information and provides guidelines on finding employment and sustaining oneself on a beginning job.

"California State Department of Education, Bureau of Industrial Education Instructional Materials List." (Revised annually)
This document is a price list of apprenticeship, technical education, fire service training, and other industrial education materials. The list is available upon request from the Bureau of Industrial Education, California State Department of Education, Sacramento, CA 95814.

California Education Information System (CEIS). Sacramento: California State Department of Education, 1972.
This document includes an overview of the CEIS system, which is operating to provide a flexible and comprehensive means of obtaining information for the management of educational programs.

Career Development Services Department. San Diego: San Diego City Unified School District, 1969.
This is an 83-page document for students. It includes a description of a systematic plan whereby young people, while still in school, can obtain realistic employment experience through part-time work.

"Career Education." Sacramento: Career Education Task Force, California State Department of Education, January 31, 1972.
This is a 4-page flyer outlining career education definition, program goals, educational level components; and a list of members of the California State Department of Education Career Education Task Force.

Career Education, An Annotated Bibliography for Teachers and Curriculum Developers. Palo Alto, Calif.: American Institute for Research for U.S. Office of Education, 1973.

Career Education Catalog. Palo Alto, Calif.: Houghton Mifflin Co., 1974.
This is a catalog of materials, aids, tests, and so forth relating to career education programs.

Career Information Director. Prepared by the Greater San Diego Industry Education Council. San Diego: Regional Career Information Center, San Diego County Department of Education, September, 1970.
This publication has much information on where to find specific information on various kinds of work through-

*Sources of Information on Career Education, An Annotated Bibliography. Sacramento: California State Department of Education, 1975.

out San Diego County. Businesses, industries, professional organizations, and so on are listed.

Career Education Guide for Elementary and Intermediate Levels. San Bernardino, Calif.: San Bernardino County Career Center, n.d.
This comprehensive document includes definitions, rationale, sample goals and objectives, and a question and answer section. It includes suggestions for implementation of programs and summaries of curriculum development and program administration.

Career Education Materials Catalog. Clarksburg, W. Va.: Lovett and Co.
This catalog of filmstrips, tapes, films, cassettes, multimedia kits, and audiovisual equipment includes a wide selection of career training materials.

Career Education Microfiche Collection Catalog. Sacramento: California State Department of Education, 1975.
This is a catalog of materials that are available on microfiche from the San Mateo Educational Resources Center (SMERC), 333 Main St., Redwood City, CA 94063.

Career Education Student's Handbook. Santa Barbara, Calif.: La Cumbre Junior High School. (Undated)
This handbook includes descriptions of 24 Career Activity Packets (CAP), each of which has its own distinct measurable learning objective. Students may progress through all 24 CAPs in formal classroom or independent study programs, working through the school Career Guidance Center. Credit is given toward graduation.

Catalog of Industrial Arts, Vocational Education Tools and Equipment. Sacramento: Brodhead-Garrett, 1972.
This catalog, published annually, includes lists of all types of machine and hand tools, electrical and electronic equipment, graphic arts materials, and so forth. The company has outlets in various locations throughout the state, including Sacramento.

Choice or Chance: Career Planning and Development, Grades 7, 8, 9. Hayward, Calif.: Office of the Alameda County Superintendent of Schools, 1968.
This 108-page publication includes information about a three-year unit designed to help the junior high school student develop positive attitudes toward work and society. It includes motivational aids toward career planning.

Drier, Harry N., Jr., and Associates. *K–12 Guide for Integrating Career Development into Local Curriculum.* Belmont, Calif.: Wadsworth Publishing Co., 1972.
This guide was prepared to assist local school personnel. It includes examples of objectives to stimulate the imagination of local school staffs. It is a guide for the intelligent application of principles in a particular setting.

Dunn, James A., et al. *Career Education: A Curriculum Design and Instructional Objectives Catalog.* Palo Alto, Calif.: American Institutes for Research, April, 1973.
This career education curriculum for kindergarten through grade nine was developed for USOE. It includes an overview of trends of the concept in schools and the characteristics and organization of the curriculum as it has developed so far. The catalog includes 2,000 instructional objectives for use by teachers and school systems in planning their local programs.

Dunn, James A., et al. *Feasibility of Guidance, Counseling, and Pupil Personnel Services in Employer-Based Career Education.* Palo Alto, Calif.: American Institutes for Research, June, 1972.
The authors explore the importance and feasibility of providing guidance, counseling, and other personnel services in experimental employer-based career education programs. They define personnel services and discuss the coordination of work and study and need for functional contexts and diagnostic and special education services.

Ellis, Betty W. *Careers Related to Industrial Education.* Los Angeles: Los Angeles Unified School District, 1964.
Although this document is 12 years old, it contains information that is still pertinent to counselors, teachers, and students. The contents include career planning, occupational guidance, industrial education, employment opportunities, and job placement.

Group Instruction for Work Experience Education. Prepared by the Los Angeles County Superintendent of Schools. Sacramento: California State Department of Education, 1972.
This handbook was designed for use by administrators and educators concerned with work education programs. It contains instructional materials, statements of goals, and sample work sheets.

Group Instruction for Work Experience Education. Sacramento: California State Department of Education, 1973.
This document includes descriptions of materials for use in group instruction in work experience education programs.

A Guide for Industrial Arts Education in California. Sacramento: California State Department of Education, 1970.
This document describes the many segments of industrial arts education in the public schools of the state, course contents, methods of instruction, safety practices, student projects, relatedness to the world of jobs, and other topics.

A Guide for Occupational Education in the Secondary Schools. San Diego: San Diego City Unified School District, 1968.
This 85-page guide was developed to assist school personnel in understanding the occupational program

and in providing guidance to high school students. Many subjects are included; for example: agriculture, data processing, electronics, health, homemaking, industrial-metal, and woodworking.

A Guide for Teaching Courses in the Dental Assisting Curriculum. San Diego: San Diego City Unified School District, 1969.
The object of this guide is to provide a comprehensive plan for teaching courses in this occupational area and to improve the effectiveness of the instructional program. The guide includes course outlines, citations of relevant textbooks and periodicals, and supplementary references.

Handbook for Junior High School Education in California. Prepared by Adin D. Henderson. Sacramento: California State Department of Education, 1969.
This source contains information about educational and vocational plans for the future. It is planned for persons working in the junior high schools.

Handbook on Work Experience Education. Alameda, Calif.: Alameda City Unified School District, 1967.
This manual was prepared to answer questions raised by students who are participating in a variety of work-experience education programs.

Principles, Objectives, and Curricula for Programs in the Education of Mentally Gifted Minors: Kindergarten Through Grade Twelve. Sacramento: California State Department of Education, 1971.
This document covers the more effective ways of educating talented children and youth. It has implications for career planning and seeks to stimulate serious thinking about making better use of gifted individuals in today's society.

Project FEAST (Foods Education and Service Technology). San Francisco: City College of San Francisco, 1971.
This student-oriented kit includes program descriptions, explanations, and bibliographies about careers in the food services, as well as a paper written on the project itself. The kit includes brochures on the food service, hospitality, and hotel service fields and other related topics, and a variety of special references.

Project VIEW: History and Development. Prepared by Edwin A. Whitfield and George A. Glaeser. San Diego: Department of Education, San Diego County, November, 1968.
This document is part of the overall Project VIEW program.

"Questions and Answers Regarding San Diego County Regional Occupational Program." San Diego: Office of the San Diego County Superintendent of Schools, January, 1971.
This specially prepared paper contains information about the ongoing program: flow charts, guidelines, data, and other matters.

Selected Publications of the California State Department of Education. (Revised semiannually)
This document is a list of Department publications, some of which are related to career education. It is available from the California State Department of Education, P.O. Box 271, Sacramento, CA 95802.

Sherman, Vivian S. *Trial and Testing of an Experimental Guidance Curriculum: Final Report.* Palo Alto, Calif.: American Institute for Research in Behavioral Sciences, 1967.
This publication contains information on career planning, curriculum development, occupational and vocational guidance, and ways and means of relevant guidance.

SMERC. San Mateo County Education Resources Center, Redwood City, Calif.
Established in 1968 to meet the needs of San Mateo County Schools, the organization now serves 22 additional counties in California and provides educational information to five special projects and the Association of California School Administrators.

Work Experience Education Course of Study and Curriculum Guide, Secondary Schools: Guide and Student Handbook. Placentia, Calif.: Placentia Unified School District, 1968.
This 76-page publication includes a description of this district's work-experience education program for high school students. The program is planned to motivate the youth of the community to live and work as effective adults in the business and industrial world.

Work Experience Education, A Handbook for California Secondary Schools. Sacramento: California State Department of Education, 1972.
This handbook was designed to provide administrators with current useful information needed to conduct effective work-experience programs.

Work-Study Handbook for Educable Mentally Retarded Minors Enrolled in High School Programs in California Public Schools. Prepared for the Division of Special Education by L. Wayne Campbell, Medford Todd, and Everett V. O'Rourke. Sacramento: California State Department of Education, 1971.
This handbook is intended for use in developing the educational and vocational potential of educable mentally retarded boys and girls.

△89445—300 6-76 7M LDA

75-250 03-1092 (89442) 300 4-77 7M